DIESSE DIAGNOSTICA SENESE S.P.A.

VES-MATIC 30
VES-MATIC 30 PLUS

Service Manual

Release 1.00 - English

Automatic instrument for the determination of the erythrosedimentation rate (ESR)

(patent pending)

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1. VES MATIC 30 / VES MATIC 30 PLUS - INTERVENTION PROCEDURES (TROUBLE SHOOTING)

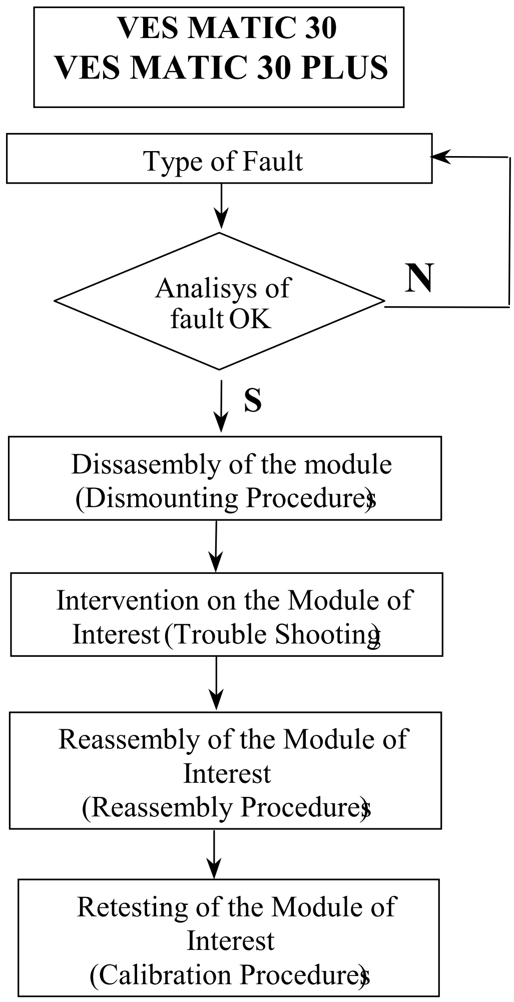
Before performing any type of intervention on the instrument:

a) SWITCH OFF THE ON/OFF SWITCH ON THE VES MATIC INSTRUMENT.
b) DISCONNECT THE INSTRUMENT FROM THE POWER SUPPLY IN ORDER TO AVOID ANY RISK OF CONTACT WITH ELECTRICAL OR MECHANICAL PARTS UNDER LINE VOLTAGE.

IF THESE BASIC RULES ARE NOT FOLLOWED, THE MANUFACTURER OF THE VES MATIC 30 / VES MATIC 30 PLUS INSTRUMENT WILL ACCEPT NO FURTHER RESPONSABILITY.

1.1. APPROACH TO THE VES MATIC 30 / VES MATIC 30 PLUS INSTRUMENT

1. Observe the recommendations reported in paragraph 1.
2. Open the outer covering of the instrument.
3. Gain access to the module of interest, as described in the procedures reported hereafter (see Flow Chart no. 1).



Flow-chart n°1

1.2. ANALYSIS OF THE FAULTS

The faults reported in the following paragraphs make reference to the Trouble Shooting procedures described for the individual modules, in order to demonstrate the type of approach to follow in these situations.

1.2.1. The instrument does not switch on

a) Check that the mains power supply is working.

b) Check the power cable.

c) Check the fuses at the back of the instrument.

d) Check the ON/OFF switch on the back of the instrument.

e) Check the Power supply module (see procedure regarding Power supply).

1.2.2. The instrument switches on / Self Test

The instrument is switched on but the Self-Test is performed incorrectly, gives Error codes, or is not performed at all.

a) The Self-Test is not performed

Check that the cover is closed - Close the cover.
Check the I/O board (see 5.5. procedure).
Check the CPU board (see CPU procedure).

b) The Self-Test is performed incorrectly - Error codes are visualized.

During the Self-Test the following Error Messages may appear on the display:

1) Error reading — Error in reading of the Motor
Error in reading of the Home sensor (see 5.5. procedure)

Check the Home Sensor (see 5.5. procedure).
Check the Motors and Controls Board (see 5.5. procedure).

2) Error plate — The sample plate holder does not move up and down

Check the UP/DOWN Sensor controlling the plate position (see 5.5. procedure)
Check the cabled Motor-reducer (see 5.5. procedure)
Check the Motors and Controls Board (see 5.5. procedure)

3) Error Mixing — The Sample holder plate does not rotate

Check the Plate Motor (see 5.5. procedure)
Check the Plate Home Sensor (see 5.5. procedure)
Check the Home sensor stirrup (see 5.5. procedure)
Check the Motors and Controls Board (see 5.5. procedure)

4) Check Device exhausted — The Check Device is not working

Check the Check Device (see 5.5. procedure)
Check the Motors and Controls Board (see 5.5. procedure)

1.2.3. The unit is on/display

a) The display visualizes but does not illuminate (backlighting cfl lamp)

b) The display does not visualize but illuminate

c) The display does not visualize and does not illuminate

d) The display visualize but the data can not be entered with the keyboard

See Display/Keyboard module procedure (5.3.).

1.2.4. The instrument switches on / Printer

a) The paper is not fed in; the printer does not print.

b) The paper advances but the printer does not print.

c) The printer prints but the paper does not advance correctly.

d) The printer prints in the compressed form.

e) The printer prints the wrong characters (see Printer procedure 5.4).

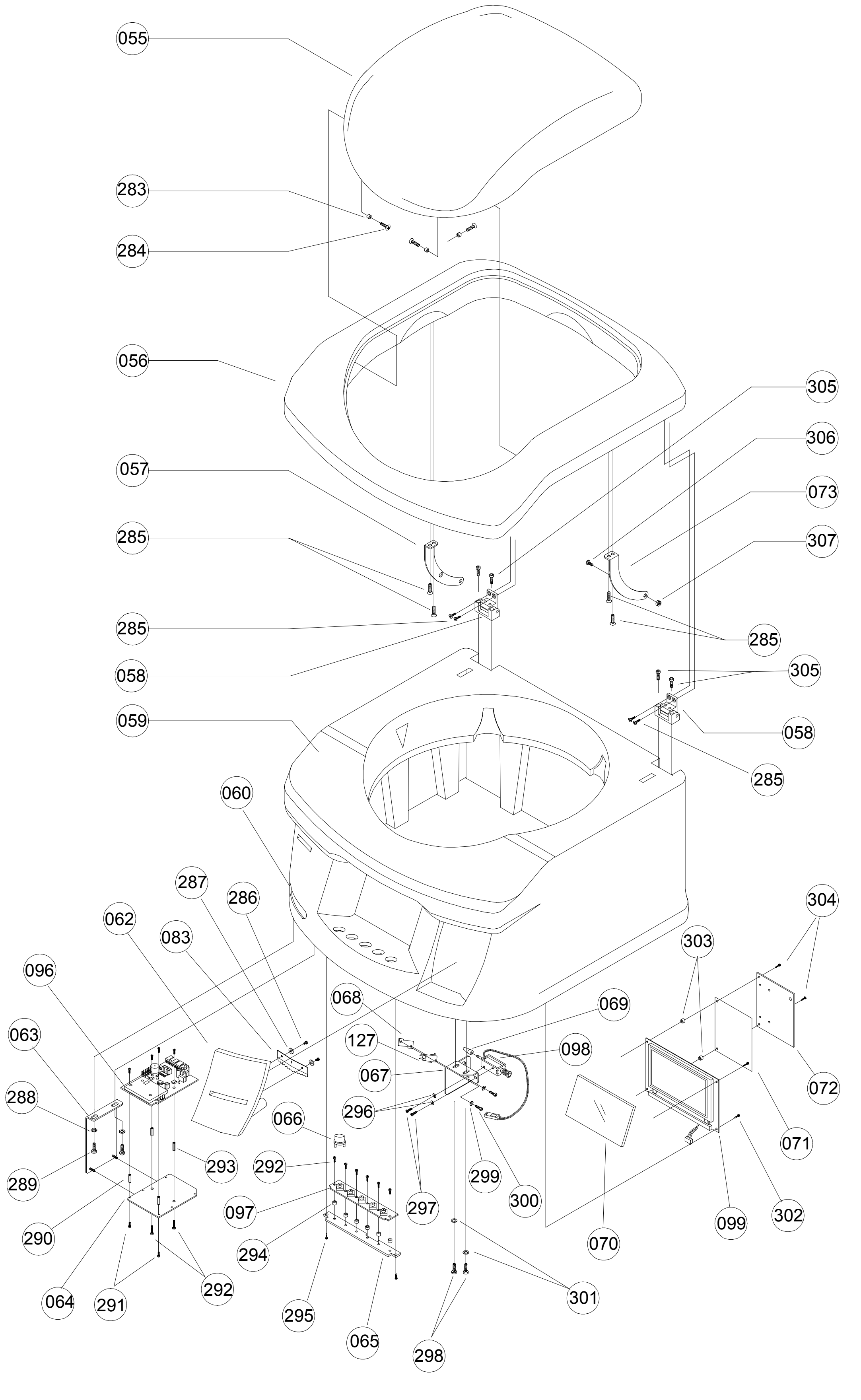
1.2.5. The instrument switches on / Check Device

a) <u>The Check Device does not charge</u>

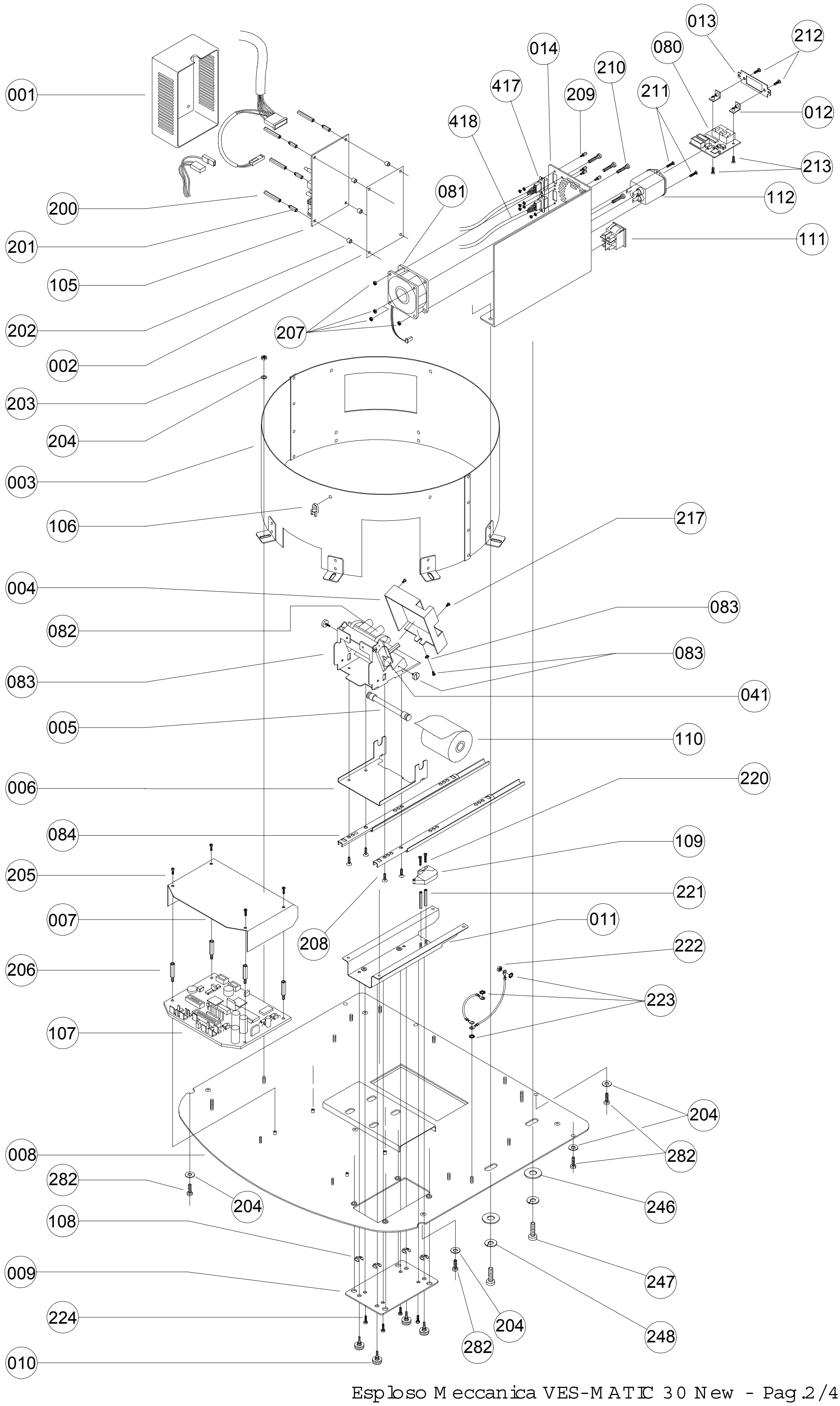
Check that the Check Device is inserted correctly:
- Switch off the instrument
- Insert a new Check Device in the Check Device holder with the label facing the operator (see operator manual, Check device procedure)
- Switch on the instrument.

If all is KO, check the Motors end Controls Board (see 5.5. procedure).

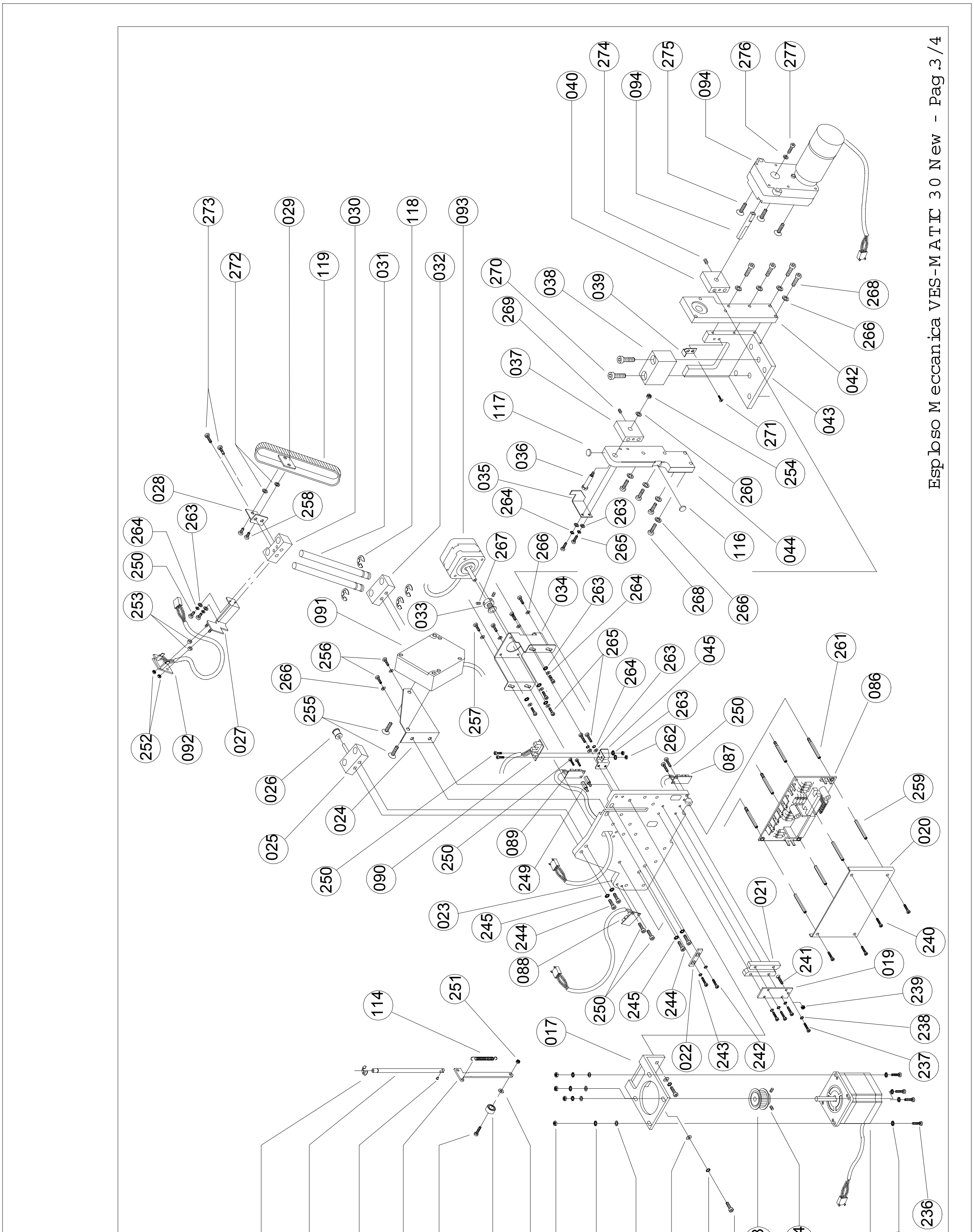
EXPLODED VIEW AND PART LIST TABLE

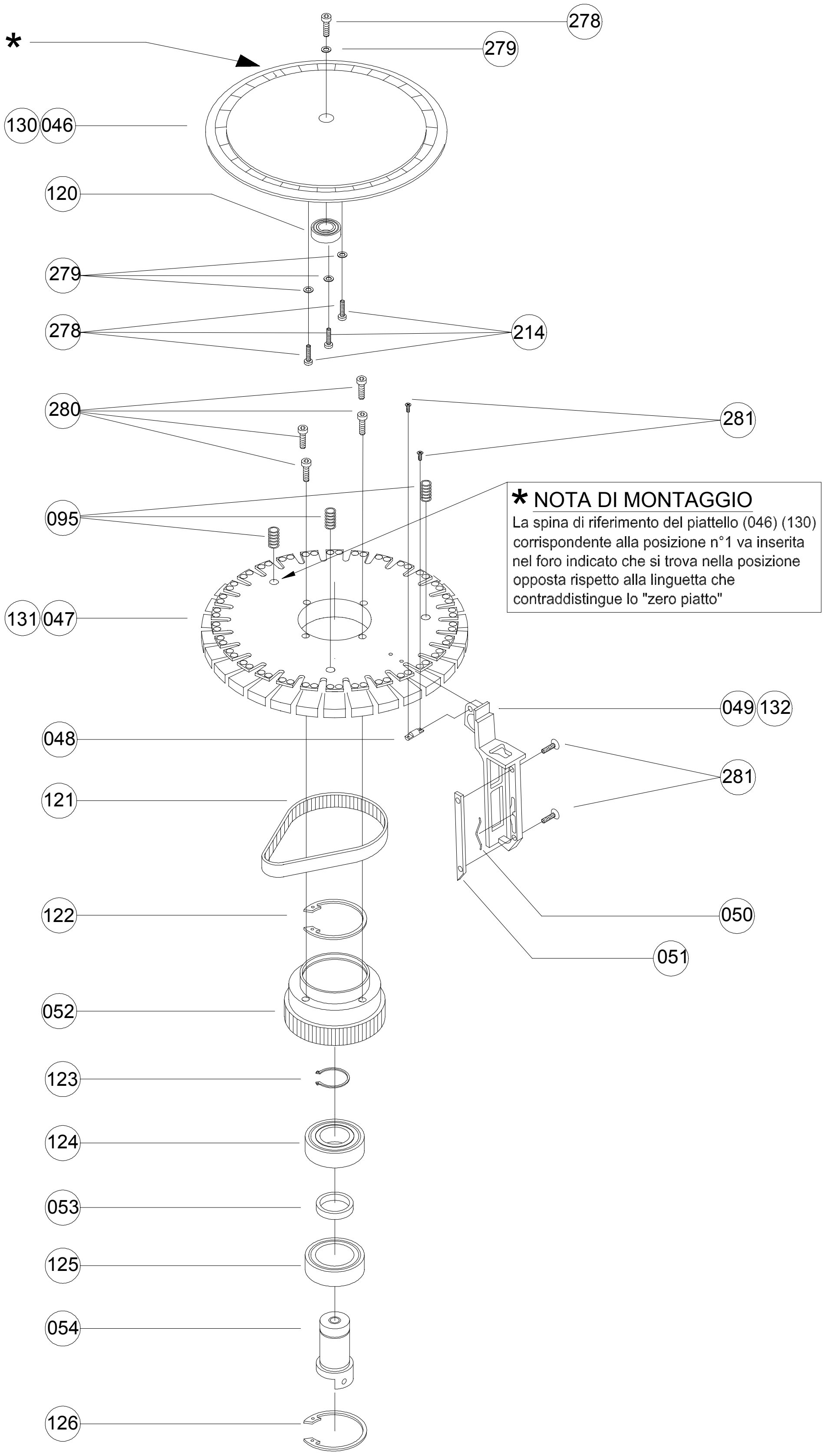


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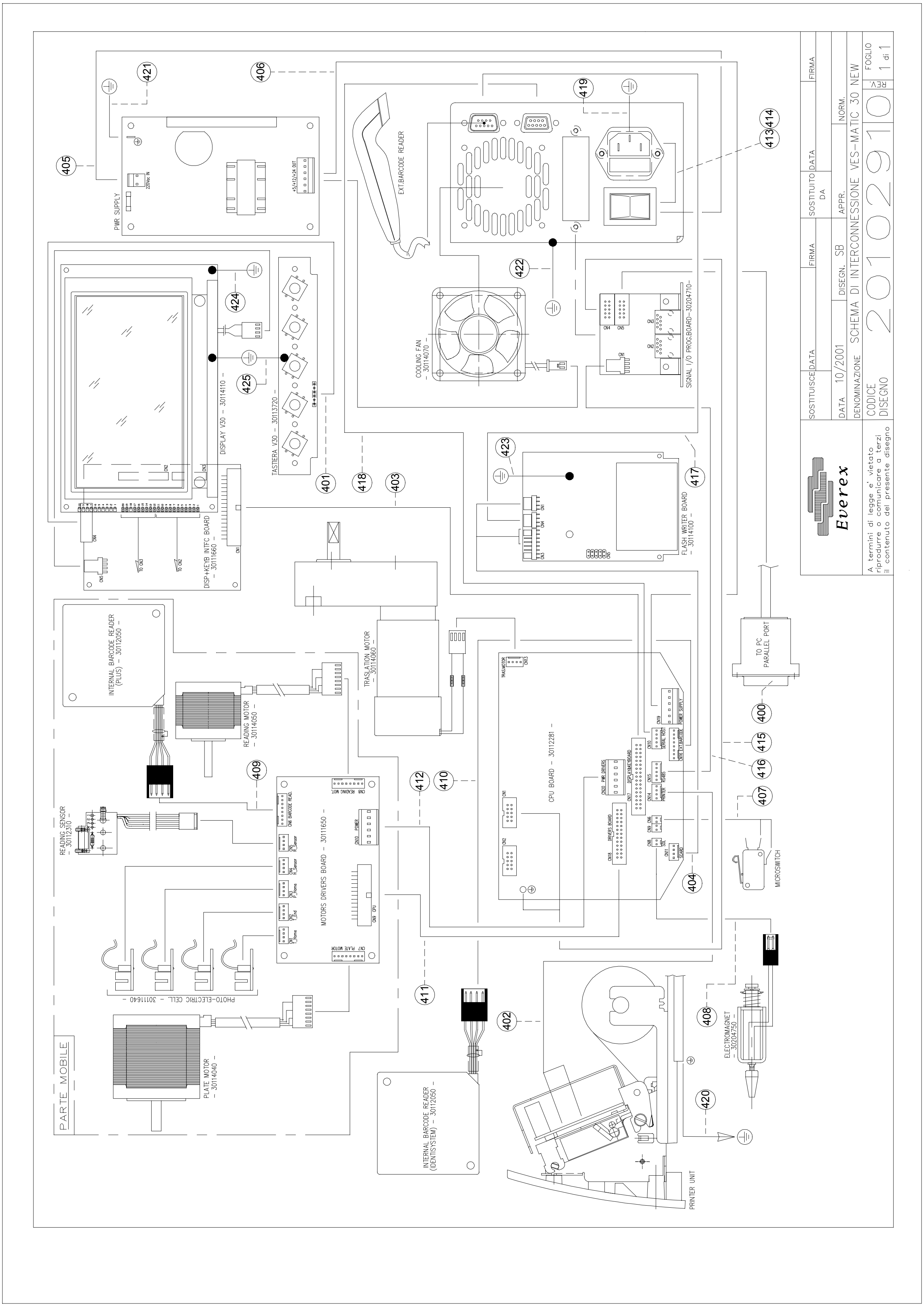


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PWR SUPPLY
EXT.BARCODE READER
COOLING FAN - 30114070 -
SIGNAL I/O PROG.BOARD-30204710-
DISPLAY V30 - 30114110 -
TASTIERA V30 - 30113720 -
DISP+KEYB INTFC BOARD - 30111660 -
FLASH WRITER BOARD - 30114100 -
INTERNAL BARCODE READER (PLUS) - 30112050 -
READING MOTOR - 30114050 -
TRASLATION MOTOR - 30114060 -
CPU BOARD - 30112281 -
TO PC PARALLEL PORT
READING SENSOR - 30112310 -
MOTORS DRIVERS BOARD - 30111650 -
MICROSWITCH
PHOTO-ELECTRIC CELL - 30111640 -
PLATE MOTOR - 30114040 -
PARTE MOBILE
INTERNAL BARCODE READER (IDENTISYSTEM) - 30112050 -
ELECTROMAGNET - 30204750 -
PRINTER UNIT
400
401
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DENOMINAZIONE SCHEMA DI INTERCONNESSIONE VES-MATIC 30 NEW
CODICE DISEGNO 20102910
REV. 0
FOGLIO 1 di 1
Everex
A termini di legge e' vietato riprodurre o comunicare a terzi il contenuto del presente disegno

30002880 – Ves-Matic 30 New	**Part list**
30001670 – Ves-Matic 30 Identisystem	
30002840 – Ves-Matic 30 Plus	

Position	*Code*	*Description*	*Note*	
001	10325860	Case power supply		
002	10128470	Insulator pad for power supply		
003	30204640	Cylinder cover for V30		
004	10326111	Case for electronic printer board		
005	10127790	Pivot for paper holder		
006	10327800	Support for printer V30		
007	10325850	Case for CPU board		
008	10325911	Base Ves 30		
009	10327890	Printer plate positioning		
010	10327820	Printer pommel recording		
011	10327810	Printer guides support V30		
012	10323970	Card support oxy/opto		
013	10327880	Card riser in/out		
014	10325871	Support power suppies		
015	10121200	Disc drive bar		
016	10121211	Lever drive disc		
017	10318771	Motor support for platter rotation		
018	10127860	Pulley for tractor platterV30		
019	10127770	Sliding plate		
020	10327540	Cover driver card		
021	10127760	Sliding block		
022	10127780	Stiffener pivot connection		
023	10318872	Plate mechanics support		
024	10118791	Bar-code reader support		
025	30204680	Group support reading guide		
026	30204650	Pulley group		
027	10319001	Reading card support		
028	10118941	Square belt clamp		
029	10118951	Plate belt clamp		
030	30204660	Group slide reading		
031	10119081	Guide group reding		
032	10327850	Support guide reading		
033	30401731	Tractor pulley undercarriage reading		
034	10325571	Reading motor support		
035	10127740	trasl_end square		
036	10125660	Hinge pivot Ves 30		

Position	*Code*	*Description*	*Note*	
037	10318831	Hinge Sx		
038	10321170	Drive lever		
039	10118881	Photocell square activation		
040	10325651	Hinge Dx		
041	21430120	print. Panas. EPL-1902S2AE		
042	10318812	Dx side		
043	10318801	Base square		
044	30204760	Side assembly Sx		
045	10127750	Optosensor support plate_home		
046	30204670	Plate blocking cuvettes assembly	Until matr. #80	
047	10325351	Plate Ves 30	Until matr. #80	
048	10125381	Pivot sample holder	Until matr. #80	
049	30204450	Sample holder assembly	Until matr. #20	
050	11300361	Spring cuvette	Until matr. #20	
051	10325371	Cover sample holder	Until matr. #20	
052	10118761	Pulley		
053	10119011	Spacer		
054	30204730	Assembly plate pivot Ves 30		
055	10600840	Trasparent cover Ves 30		
056	10300850	Cover Ves 30		
057	10126050	Stirrup Sx cover		
058	30204800	Assembly hinge cover Ves 30		
059	10300820	Case Ves 30		
060	10802100	Adesive Ves 30		
061				
062	10300861	Printer cover Ves 30		
063	10326211	Chip-card vertical stirrup		
064	10326220	Chip-card reader support		
065	10127830	Keyboard support Ves 30		
066	10600870	Push button Ves 30		
067	10126030	Solenoid microswitch support		
068	10326070	Microswitch plate		
069	10125260	Push rod cover security		
070	10118410	Glass display		
071	10128030	Insulator pad interf. display/keyb.		
072	30111660	Board interf. display+keyb. Ves 30		
073	10126060	Stirrup Dx cover		
074				
075				
076				
077				

Position	*Code.*	*Desciption*	*Note*	
078				
079				
080	30113480	Board signal in/out RS485/prog		
081	30114070	Fun cooler V30/V20 new		
082	30111340	Board printer WT01 small		
083	30401920	printer WT01		
084	30401910	Guide Würth		
085	30114040	Plate motor V30 new		
086	30111650	Driver board V20/V30		
087	30111640	Optosensor board Ves 20 with cable		
088	30111640	Optosensor board Ves 20 with cable		
089	30111640	Optosensor board Ves 20 with cable		
090	30111640	Optosensor board Ves 20 with cable		
091	30112050	Bar-code reader with cable		
092	30112310	Reading sensor V20/V30		
093	30114050	Motor V30/V20 new		
094	30114060	Motorgear V30/V20 new		
095	11300120	Spring		
096	30114100	Board flash writer rev.01 vers.V30/V20 new		
097	30113720	Keyboard board Ves 30		
098	30204750	Solenoid assembly		
099	30114110	Display Ves 30 new with cable		
100				
101				
102				
103				
104				
105	21440230	Power supply Mean-Well PT65-D		
106	1110H39Z	Steab 5506//////15		
107	30112281	CPU board Ves30/Ves20 new Rev.01		
108	1110674Z	Elastic ring Benzing 5 UNI 7434-75		
109	12500280	Pression closing mini-latch 188 fin.15		
110	12300010	Termal printer roll paper l=58 mm		
111	21200540	Switch OMEGA I4700 16A/250V		
112	20892130	Mains input plug ACTRONIC AR-09-2F-6A		
113	1110674Z	Elastic ring Benzing 5 UNI 7434-75		
114	11300520	Spring		
115	11504360	Ball bearing 624-2Z		
116	1110F35Z	Autoades. Pressure foot Würth 0683-284-3		
117	1110F35Z	Autoades. Pressure foot Würth 0683-284-3		
118	1110675Z	Elastic ring Benzing 6 UNI 7434-75		

Position	*Code*	*Description*	*Note*	
119	11712010	Belt 1056 MXL 025		
120	11504290	Ball bearing 626-2Z		
121	11711920	Belt 102 XL 037 (svil. 259,08)		
122	1110611T	Elastic ring Seeger I 42 UNI 7437		
123	1110596R	Elastic ring Seeger E 20 UNI 7435		
124	11504370	Ball bearing 6004-2Z		
125	11504370	Ball bearing 6004-2Z		
126	1110611T	Elastic ring Seeger I 42 UNI 7437		
127	21200680	Microswitch Honeywell V5C010BG1L		
128				
129				
130	30204780	Plastic plate blocking cuvettes assembly	To matr. #81	
131	10600720	Plastic plate sample holder V30	To matr. #81	
132	30204770	Plastic sample holder assembly	To matr. #21	
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200	1110023Z	Hexagonal spacer F-F M3x30		
201	1110024Z	Hexagonal spacer M-F M3x20		
202	1110010Z	Spacer STEAB 5021/5////05		
203	1114474L	Nut M4 UNI 5588 inox		
204	1114501Z	Washer 4,3x9 UNI 6592 inox		
205	11141182	Screw M3x8 UNI 7687 inox		
206	1110026Z	Spacer esag. M-F M3x30		
207	1114473L	Nut M3 UNI 5588 inox		
208	11141183	Screw M3x8 UNI 7688 inox		
209	20814070	Kit hexagonal spacer		
210	11141272	Screw M3x30 UNI 7687 inox		
211	11141183	Screw M3x8 UNI 7688 inox		
212	11141182	Screw M3x8 UNI 7687 inox		
213	11141183	Screw M3x8 UNI 7688 inox		
214	1110390G	Screw PZAB 2,9x9,5 UNI 6954 Zn	To Matr. #81	
215				
216				
217	11141092	Screw M2,5x6 UNI 7687 inox		
218				
219				
220	11141242	Screw M3x20 UNI 7687 inox		
221	1110070Z	Hexagonal spac F-F M3x25		
222	1114474L	NutM4 UNI 5588 inox		

Position	Codice Art.	Descrizione	Note	
223	1114B62Z	Washer dentellata A4,3 DIN 6798 inox		
224	11141414	Screw M4x14 UNI 5931 inox		
225	11141176	Screw M3x6 UNI 5923 inox		
226	11141414	Screw M4x14 UNI 5931 inox		
227	1114501Z	Washer 4,3x9 UNI 6592 inox		
228	1114474L	NutM4 UNI 5588 inox		
229	1114B62Z	Washer A4,3 DIN 6798 inox		
230	1114501Z	Washer 4,3x9 UNI 6592 inox		
231	1114501Z	Washer 4,3x9 UNI 6592 inox		
232	1114B62Z	Washer A4,3 DIN 6798 inox		
233	11141414	Screw M4x14 UNI 5931 inox		
234	11141376	Screw M4x6 UNI 5923 inox		
235	1114501Z	Washer 4,3x9 UNI 6592 inox		
236	11141424	Screw M4x16 UNI 5931 inox		
237	11141212	Screw M3x14 UNI 7687 inox		
238	1114B61Z	Washer dentellata A3,2 DIN 6798 inox		
239	1110459Z	Autoblocking nut M3 UNI 7473 Zn		
240	11141174	Screw M3x6 UNI 5931 inox		
241	11141203	Screw M3x12 UNI 7688 inox		
242	11141414	Screw M4x14 UNI 5931 inox		
243	1114B62Z	Washer A4,3 DIN 6798 inox		
244	11141424	Screw M4x16 UNI 5931 inox		
245	1114B62Z	Washer A4,3 DIN 6798 inox		
246	1114549Z	Washer 6x18 inox		
247	11141964	Screw M6x16 UNI 5931 inox		
248	1114B39Z	Washer A6,4 UNI 1751 grover inox		
249	1110020Z	Hexagonal spacer M-F M3x7		
250	11141174	Screw M3x6 UNI 5931 inox		
251	1110460Z	Autoblocking nut M4 UNI 7473 Zn		
252	1114473L	Nut M3 UNI 5588 inox		
253	1110009Z	Washer STEAB 5015/4/1//16		
254	1110460Z	Autoblocking nut M4 UNI 7473 Zn		
255	11141493	Screw M4x35 UNI 7688 inox		
256	11141384	Screw M4x8 UNI 5931 inox		
257	11141384	Screw M4x8 UNI 5931 inox		
258	11141092	Screw M2,5x6 UNI 7687 inox		
259	1110030Z	Hexagonal spacer M-F M3x25		
260	1114501Z	Washer 4,3x9 UNI 6592 inox		
261	1110026Z	Hexagonal spacer M-F M3x30		
262	1114473L	Nut M3 UNI 5588 inox		
263	1114499Z	Washer 3,2x7 UNI 6592 inox		

position	*Code*	*Description*	*Note*	
264	1114B36Z	Washer A3,2 UNI 1751 grover inox		
265	11141174	Screw M3x6 UNI 5931 inox		
266	1114501Z	Washer 4,3x9 UNI 6592 inox		
267	11141176	Screw M3x6 UNI 5923 inox		
268	11141444	Screw M4x20 UNI 5931 inox		
269	11141376	Screw M4x6 UNI 5923 inox		
270	11141984	Screw M6x20 UNI 5931 inox		
271	11141183	Screw M3x8 UNI 7688 inox		
272	1114499Z	Washer 3,2x7 UNI 6592 inox		
273	11141174	Screw M3x6 UNI 5931 inox		
274	11101937	Screw M6x10 UNI 5925 Zn		
275	11141423	Screw M4x16 UNI 7688 inox		
276	1114501Z	Washer 4,3x9 UNI 6592 inox		
277	11141384	Screw M4x8 UNI 5931 inox		
278	11141174	Screw M3x6 UNI 5931 inox	*Until Matr. #80*	
279	1114499Z	Washer 3,2x7 UNI 6592 inox		
280	11141484	Screw M4x30 UNI 5931 inox		
281	11141183	Screw M3x8 UNI 7688 inox	*Until Matr. #80*	
282				
283	1110069Z	Washer TS STEAB art.5396/3////25		
284	1110389H	Screw PZAB 2,9x6,5 UNI 6955 Zn		
285	11141383	Screw M4x8 UNI 7688 inox		
286	11141184	Screw M3x8 UNI 5931 inox		
287	1114501Z	Washer 4,3x9 UNI 6592 inox		
288	1114544Z	Washer 4x12 inox		
289	11141394	Screw M4x10 UNI 5931 inox		
290	1110H65Z	Hexagonal spacer F-F M2x20		
291	11100982	Screw M2x5 UNI 7687 Zn		
292	11141182	Screw M3x8 UNI 7687 inox		
293	1110F30Z	Hexagonal spacer M-F M3X12		
294	1110F56Z	Spacer STEAB 5021/3////06		
295	1110391G	Screw PZAB 2,9x13 UNI 6954 Zn		
296	1114497Z	Washer 2,7x6,5 UNI 6592 inox		
297	11141092	Screw M2,5x6 UNI 7687 inox		
298	11141384	Screw M4x8 UNI 5931 inox		
299	1114499Z	Washer 3,2x7 UNI 6592 inox		
300	11141224	Screw M3x16 UNI 5931 inox		
301	1114544Z	Washer 4x12 inox		
302	1110391G	Screw PZAB 2,9x13 UNI 6954 Zn		
303	1110F56Z	Spacer STEAB 5021/3////06		
304	1110392G	Screw PZAB 2,9X16 UNI 6954 Zn		

Position	*Code*	*Description*	*Note*	
305	11141444	Screw M4x20 UNI 5931 inox		
306	11141394	Screw M6x10 UNI 5931 inox		
307	1110462Z	Autoblocking nut M6 UNI 7473 Zn		
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--------------------- *Cables list* -----------------------------

Position	*Code*	*Description*	*Note*	
400	30114080	Programming cable V30/V20 new	optional	
401	30113970	Interface keyboard cable Ves30		
402	30113840	Printer cable Ves30/Ves20 new		
403	30113880	Interf. display+keyb cable V30		
404	30113830	Flash writer cable Ves30		
405	30114000	90/264Vac cable V30/V20 new		
406	30113990	CPU/fun cable V30/V20 new		
407	30113930	Microswitch cover cable Ves30		
408	30113920	Solenoid cable V30		
409	30113940	Cable racc. lett. Barcode int. V30 new		
410	30113980	Hexternal barcode cable V30/V20new		
411	30113870	Motor driver signal cable V30/V20new		
412	30113890	Motor driver supply cableV30/V20 new		
413	30114020	Neutral filter/plug cable Ves30/Ves20new		
414	30114010	Fase filter/plug cable Ves30/Ves20new		
415	30113850	Programm. Cable ISP Ves30		
416	30113910	Serial cable RS485 V30		
417	30113860	Hext. barcode reader cable Ves30		
418	30113820	Serial cable RS232C Ves30		
419	30114190	Ground cable L=150 O/F		
420	30114200	Ground cable L=120 O/O		
421	30114230	Ground cable L=250 O/F		
422	30114200	Ground cable L=120 O/O		
423	30114220	Ground cable L=300 O/O		
424	30114210	Ground cable L=200 O/O		
425	30114200	Ground cable L=120 O/O		
426				

2. PROCEDURE TO DISMOUNT THE ROTATION GROUP-SAMPLE HOLDER PLATE (see figure of exploded views)

Proceed step by step as reported below

a) Follow the recommendations in paragraph 1 points a) and b)

b) Unscrew the 2 screws (pos. 247) underneath the instrument and make draw back alongthe slotlungo the power supply modulus, unscrew the 4 screws (pos. 282)on the base's external sides

c) Open the outer covering (Pos. 059), lifting the front part and rotating it towards, be carefull to don't damage the internal cables.

d) Unscrew with a key the screw (Pos. 278) that bolcks the disc (pos. 046/130) unscrew the four screws (pos. 280) that block the sample holder plate (pos. 047/131)

e) Remove the sample holder plate (Por. 047/131)

e) Now we have at totally disposition the instrument's mechanics for any intervention

3.PROCEDURE FOR REASSEMBLY OF THE ROTATION GROUP-SAMPLE HOLDER PLATE

Follow the procedure reported below:

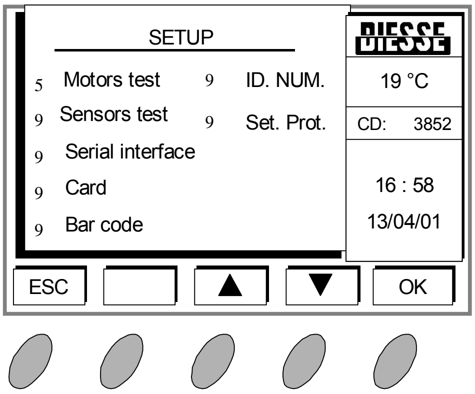
To go backward in the procedure reported at the point N 2.

4. CALIBRATION PROCEDURE VES MATIC 30 /VES MATIC 30 PLUS A AFTER DISMANTELING OF FOR PERIODIC CHECK

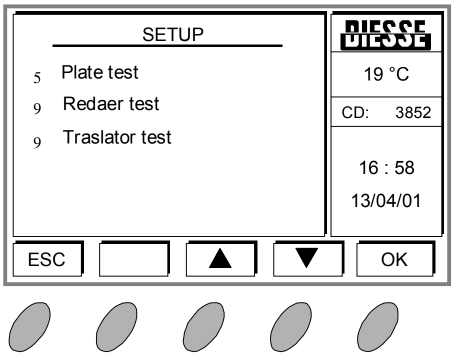
Once the unit is re-assembled, keeping the carter open:

Turn on the instrument and to the principal menù select Setup menù, push OK for to confirm, then select the assistance menù and push OK.
On the display compares to put Password, push 8 times the button OK and the instrument is in Setup way.

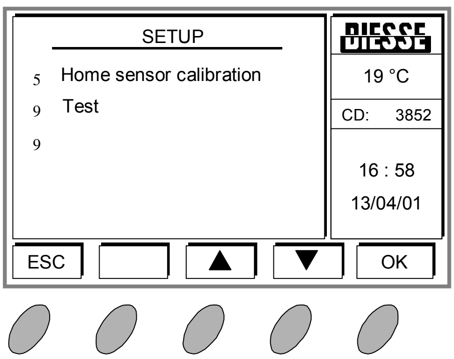
Motors test



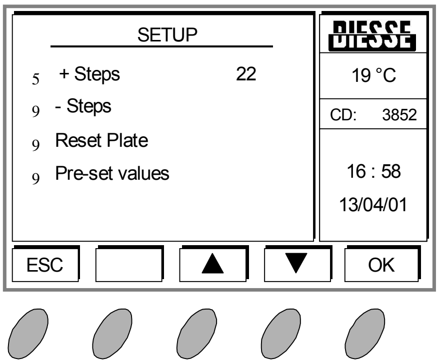
-select motors test



-select plate test



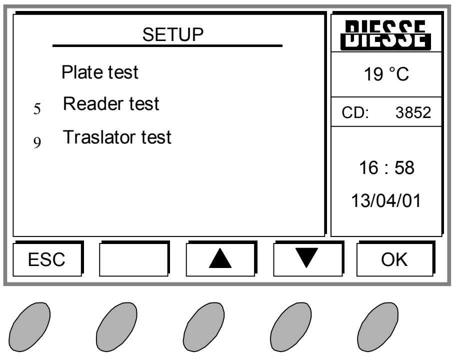
-select “calibration steps plate”



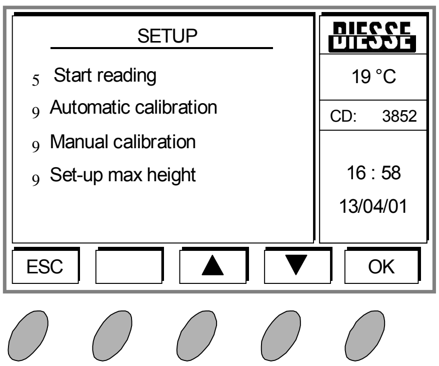
selectionig “+ steps”we shift the plate home position in anticlockwise sens , selectioning “-steps” we shift the plate home position in clockwise sens. With “Reset Plate” we verify the new plate home position. Putting one cuvette in position 1 we verify the centring to reading sensor (pos. 092).

Selectioning the pre-set values we set up back the default value that it’s the same for all the instruments.

Reader test

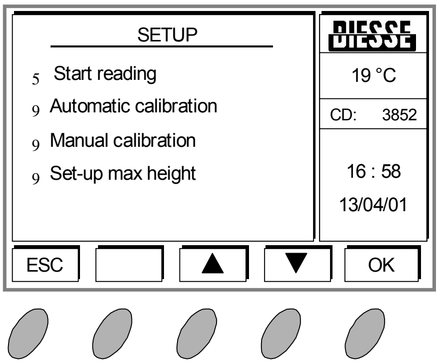


select “reader test”



select “start reading” the machine makes a reset turn of the sample holder plate and makes a reading on the position 1 if the cuvette is absent appears ABSENT next to Start Reading. If the cuvette of the sensor test is present writes the read value of the height in tenth millimetre (with the sensor test cuvette the value is about 527 tenth millimetre).If the cuvette is too high appear HIGH.

Select automatic calibration



the instrument makes reset turn of the sample holder plate positioning the cuvette 1 in correspondence of the sensor reading, and ask the introduction of one cuvettewith the latix calibration 3, introduce the cuvette and push “OK” (we suggest to close the cover for to avoid the light). The instrument makes some readings until to lowering the current on the sensor succeedes don’t pierce the latex to 3. On the display appear a calibration value of the trimmer (about 20).

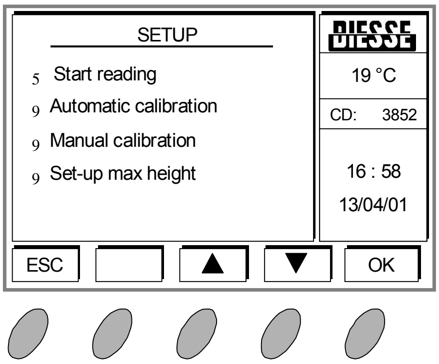
Now the instrument ask to insert one cuvette with latix calibration 2, insert the cuvette and push “OK”.

The instrument makes some readings till when regulating the current on the sensor succeedes don’t pierce the latix to 2.On the display appear for a moment the calibration value of the trimmer (about 40),then appear the medium value which comes calibrated the sensor, in the values used like example results 30.

The instrument ask again to insert the cuvette with calibration latix to 3 for make a verify, insert the cuvette and push “OK” on the display appear the calibration value of the trimmer (30) and then the sensor state that have to be in light.

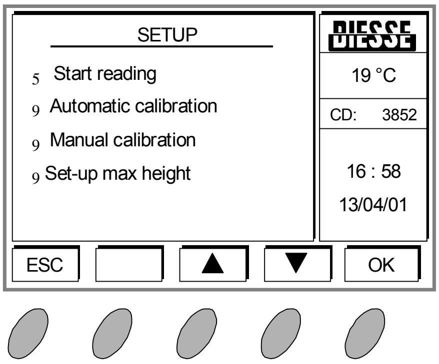
The instrument ask to insert again the cuvette with latix calibration to 2 for to make the second verifyper, insert the cuvette and push “OK” on the display appear the calibration value of the trimmer (30) and then the sensor state that have to be in dark.

Select “manual calibration”



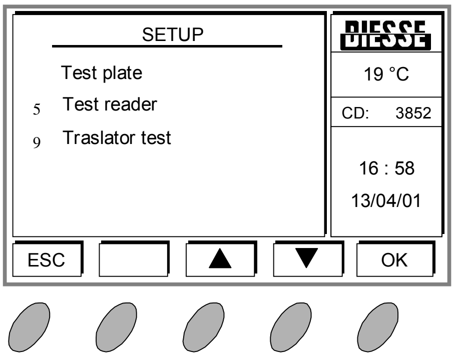
the instrument makes a reset turn of the sample holder plate, positioning the cuvette 1 in correspondance of the sensor reading, and display the calibration value of the trimmer recorded.
Insert the calibration cuvette with the latix 3ml, push “sensor state” the instrument makes a reading that have to give for result the sensor state in light.
Get off the cuvette and insert that with the latix calibration 2ml, push “sensor state” the instrument makes a reading that have to give for result the sensor state in dark.

Select “set-up max height”

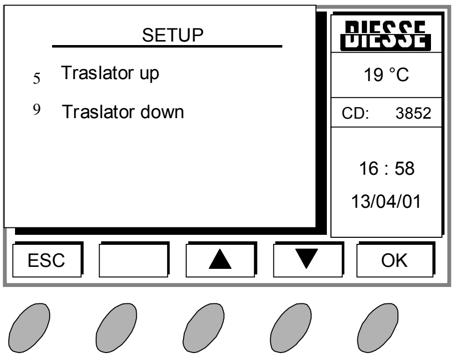


The instrument makes a reset turn and put the cuvette 1 in correspondenceof the sensor state
Selectioning “+ IR sensor height” and pushing “OK” we increase until to 85 mm.
Selectioning “- IR sensor height”and pushing “OK” we reduce until to min 43 mm.
Selectioning “IR sensor reset” e pushing “OK” the instrument makes the set-up recorded.
The medium value which are recorded the instruments results to be 83 mm.
The prove have to be make without any cuvette in the position 1.

Traslator test



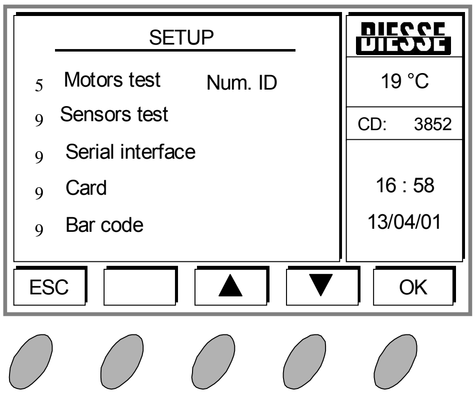
Select “Traslator test”



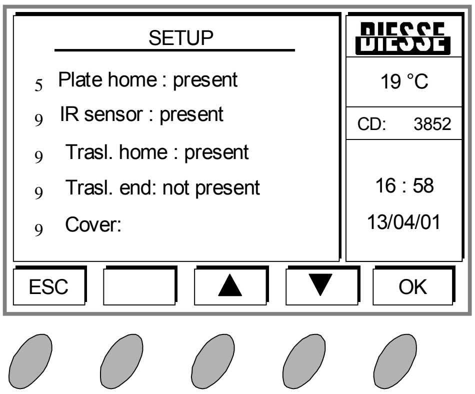
Selectionig “Traslator up” and pushing “OK” the instrument verifies the traslator position,if it’s in down position it get it up otherwise remains in up position Selectioning“traslator down ” and pushing “OK” the instrument verifies the traslator position and if it’s in up position it takes down otherwise remains in down position.

At the end of the test we have to take back the traslator in up position.

Sensors Test



select “Sensor Test”



On the display appears the image above written, this is a photo of the opticals or mechanics sensors’state’s instrument, making some simple manual operations we can varify their functionality, if we shift manually the sample holder palte on the display will appear the voice “home plate: doesen’t present”.

This because revolving the plate the tang that closes the photoelectirc sensor (pos. 090) it shiftes and the sensor goes in light.The same operation we can do on the reading truck sensor (pos. 088),moving manually the belt that action it (pos. 119), we’ll see that the voice “Home reader : present” will change.

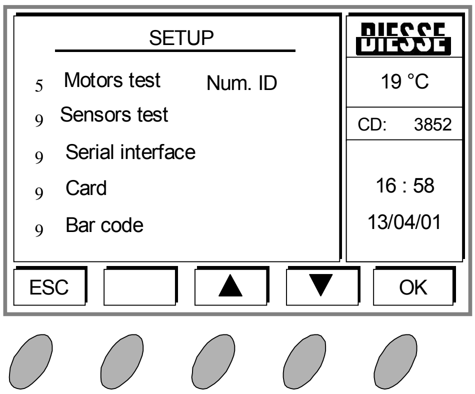
About the traslator’sensors the verify can be made going in to the motors test and positionig time after time the traslator up and down.We have to go in to the sensor test again and we’ll found changed the states of the relative sensors.

With the traslator “up” the voice “Home Trasl. ” indicates present but the voice “ End Trasl. ” indicates not present.

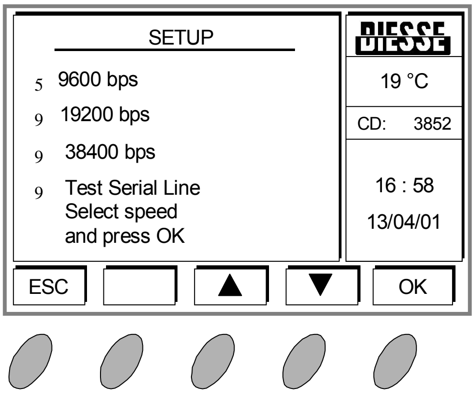
With the traslator “down” the voice “ Home Trasl.” indicates not present but the voice “ End Trasl.” Indicates present.

<u>In any chance we have to action the traslator in manual way because the only result we are going to have is the breaking of the moto reducer (pos. 094) that actions it.</u>

Serial Interface



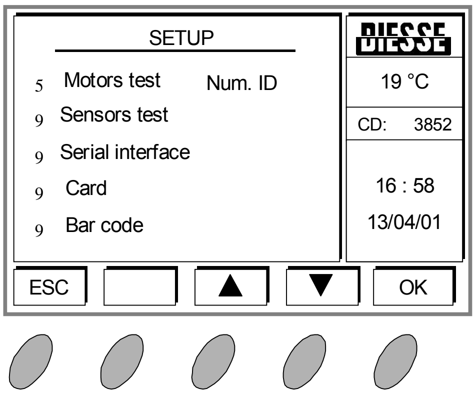
select “Serial interface”



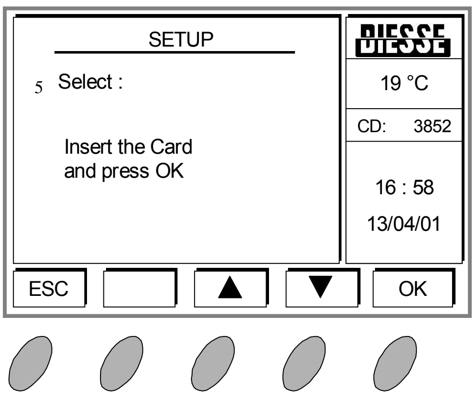
Wiht this menù we can change the serial door’s speedCon questo menù si può variare la velocità della porta seriale from 9600 bps to 38400 bps (9600 default values)

Selectionig the voice “ Serial line Test” and assembling on the connector serial’s door placed behind the instrument (pos. 418) the plug test, we can verify if the speed set up is right .

Card



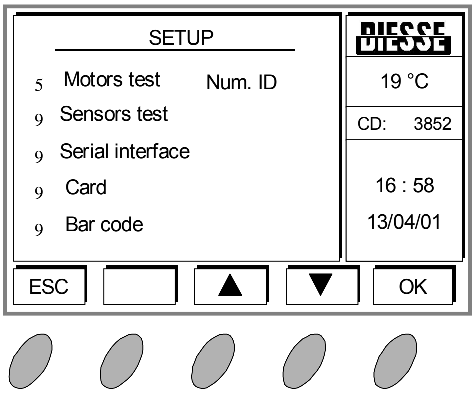
select “Card”



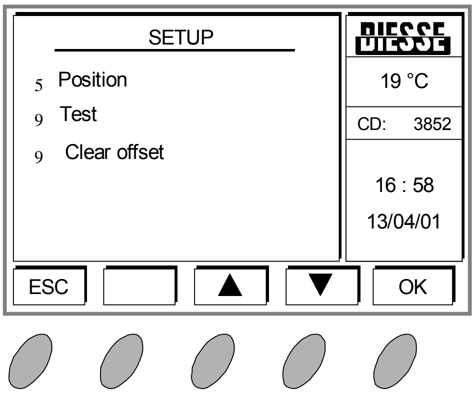
With this menù we can verify the functionality of the paper that have function of the check device, insert the check device like the description on paragraph 1.2.2 par. 4 e push OK

On the display appears CARD OK or CARD KO.

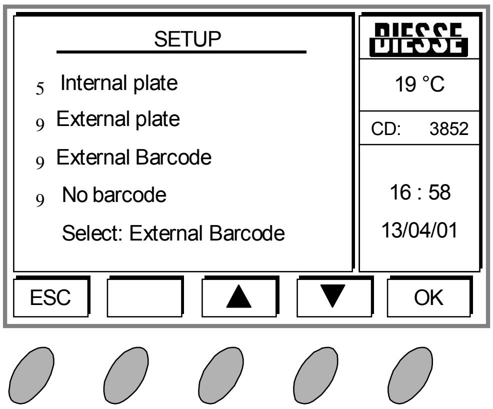
Barcode



select "Barcode"



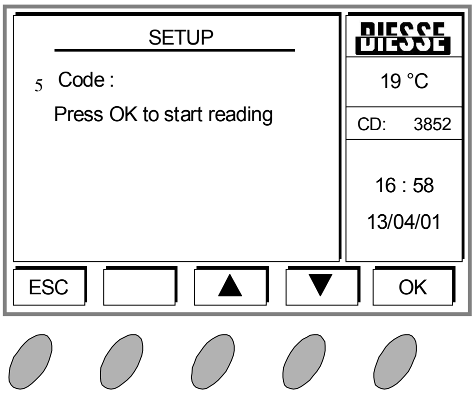
With this menù we can select and set up the working of the barcode, select the voice "Position"



in this menù is possible to fix the position of the instrument's barcode.
Selectioning "internal plate" we qualify the reader barcode's functions assembled in to the sample holder plate (right selection only for Vesmatic 30 PLUS).
Selectioning "external plate" we qualify the reader barcode's functions assembled at the external of the sample holder plate (right selection only for Vesmatic 30 IDSYSTEM).
Selectioning "External Barcode" we qualify the reader barcode's functions assembled at the external of the instrument on the connector placed behind the instrument (connector pos. 417) (right selection for all the Vesmatic 30 to qualify only without the reader in to the instrument).

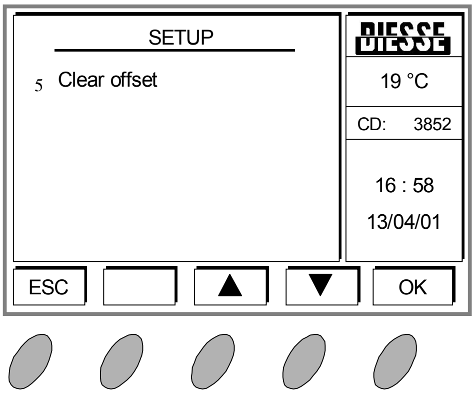
Selectioning "Not barcode" we disable the reader barcode's functions everywhere it's connected.
The last line of the menù shows the current state of the setting.

Select "Test"



this function downstream the assembly of the barcode selected, placed a cuvette with barcode makes the reading.

Select "Clear offset"



selectioning this functionwe have the offset zerosetting relative to the reading position with barcode assembly in External plate and Internal plate, the offset value comes formulated back automatically from the machine.
For to formulate it back go out from the setup menù , insert a cuvette with barcode in position 1 of the sample holder plate, select a cycle of analysis and automatically the instrument calculate back the offset.
This menù is useful the mechanics or the barcode reader came disassembled so we lost the calibration.

5. PROCEDURES TO FOLLOW FOR INTERVENTIONS ON THE DIFFERENT MODULES

5.1. <u>SERVICE MANUAL THE POWER SUPPLY MODULE (Pos. 105)</u>

5.1.1. General

5.1.1.1. Aim

5.1.1.2. Applicability

5.1.2. Relative documentation

5.1.3. Relative instrumentation

5.1.4. Trouble shooting

5.1.4.1. Description of the module

5.1.5. Flow Chart no. 2

5.1.6. Access to the module

Appendix A: Examination of the faults

5.1. <u>SERVICE MANUAL THE POWER SUPPLY MODULE (Pos. 105)</u>

5.1.1. General

5.1.1.1. Aim

The present document furnishes details of the Trouble Shooting procedures regarding the Power supply module (Pos. 105), assembled on the VES MATIC 30 / VES MATIC 30 PLUS instrument.

5.1.1.2. Applicability

The recommendations contained in the present document are applicable for use in the final service check-up to ascertain the acceptability of the instrument.

5.1.2. Relative documentation

20102910 Scheme of the VES MATIC 30 / 30 PLUS system (in the current edition).

5.1.3. Relative instrumentation

Multimeter Mod. FLUKE 8010A or equivalent.

Philips Laboratory Oscilloscope or equivalent.

Standard laboratory welder.

3-4 mm screw-drivers, pliers, standard laboratory tools.

5.1.4. Trouble shooting

5.1.4.1. Description of the module

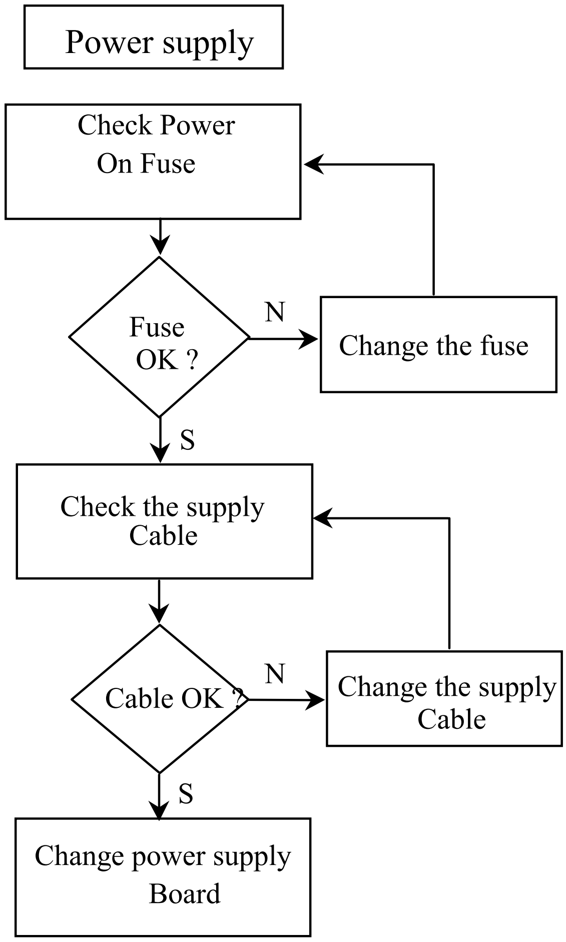
The power supply form has made from a multifrequency multitension switching power supply that distributes the right tensions for the instrument working.
The tensions accepted in entry are:
Vca from 90 to 264 Volt
Work frequency from 44 to 440 Hertz
P Max d.c 65 Watts

The tensions supplied in exit are the following:

+5 Vdc n°1 red cable
+12 Vdc n°1 orange cable
+24 Vdc n°1 blu cable
Gnd n°3 black cable

5.1.5. Flow Chart no. 2

Trouble shoooting phase in relation to the Power Supply module (Pos. 105).



5.1.6. Access to the module

a) Disconnect the VES MATIC 30 / VES MATIC 30 PLUS instrument from the power supply, as reported in paragraph 1.

b) Remove the outer covering as reported in paragraph 2 in order to gain access to the internal parts.

c) Unscrew the screw (pos. 247) and remove the case (pos. 001)

d) Disconnect the cable connected on Power Supply (pos. 405, 406, 421)

e) Unscrew the Hexagonal spacer (pos. 200 and 201).

f) Remove the Power Supply module board.

g) Replace the faulty power supply board whith another new

Appendix A: Examination of the possible faults

The examination of the main defects is performed according to the table reported below:

Type of failure	The voltage is not coming through on connector pos. 405
Local effect	The indicator LEDs of CPU board (pos. 107) are off.
General effect	No voltage is going out to the different connectors.
Action	1. Ensure that the unit is correctly connected to the mains power supply. 2. Check the fuse and the cable; replace if necessary.

Type of failure	The LEDs of CPU board are off even though the voltage is present on cable pos. 405.
Local effect	The indicator LEDs are off.
General effect	There is no exit voltage for the power supply board pos. 105
Action	1. Ensure that the cable pos. 406 is correctly connected to the power supply and the CPU board. 2. Check if there is voltage at the exit of the power supply board, replace if necessary.

5.2. SERVICE MANUAL CPU MODULE (Pos. 107)

5.2.1. General

5.2.1.1. Aim

5.2.1.2. Applicability

5.2.2. Relative documentation

5.2.3. Relative instrumentation

5.2.4. Trouble shooting

5.2.4.1. Description of the module

5.2.5. Flow Chart no. 3

5.2.6. Access to the module

Appendix B: Examination of the faults

5.2. <u>SERVICE MANUAL CPU MODULE (Pos. 107)</u>

5.2.1. General

5.2.1.1. Aim

The present document reports in detail the Trouble Shooting procedures regarding the CPU unit code 30100020, assembled on the VES MATIC 30 / VES MATIC 30PLUS instrument.

5.2.1.2. Applicability

The recommendations reported here below are applicable in the final service check to ascertain acceptability of the product.

5.2.2. Relative documentation

20102910 Scheme of the VES MATIC 30 / 0 PLUS system (current version).

20102631 Electric scheme of the CPU module.

30112281 Layout of the CPU module.

5.2.3. Relative instrumentation

Multimeter Mod. FLUKE 8010A or equivalent.

Philips Laboratory Oscilloscope or equivalent.

Standard laboratory welder.

3-4 mm screw-drivers, pliers, standard laboratory tools.

Power Supply (Pos. 105).

5.2.4. Trouble shooting

5.2.4.1. Description of the module

The CPU board controls all the peripherals connected to it. It can be subdivided into the following blocks:

a) MPU & CONTROL ADDRESS/DATA BUS IC1 ATMEGA 103

b) MEMORY IC3 RAM 62256

c) DECODER IC17 EPM3064

d) SERIAL PORT /BAR CODE IC13, IC14, IC15 MAX 202 or equiv.

e) POWER SUPPLY CN19 MOLEX

a) MPU and CONTROL ADDRESS/DATA BUS Block

This block includes the microprocessor which performs the functions according to the resident programme. It contains a system clock of 6 Mhz and a bus speed (speed at which an operation is performed) of 6 Mhz.

b) MEMORY Block

FlashEprom	This is integrated in the CPU processor which contains the control programme. The memory has a capacity of 128 KByte x 8Bit.
SRam	I.C. where the MPU temporarily transfers data or variables, with random access.

c) DECODER Block

The CPLD (Complex Programmable Logic Device) present in this block is responsible for the decoding functions.

d) SERIAL PORT block & BAR CODE

The serial comunication has made from the devices MAX202 or eq. where in its internal there is the necessary for to have a negative tension value and larger amplitude even if it has a feeding not larger than 5V. The dates relatives to the serial door are setting from the program so are fixed in the following:

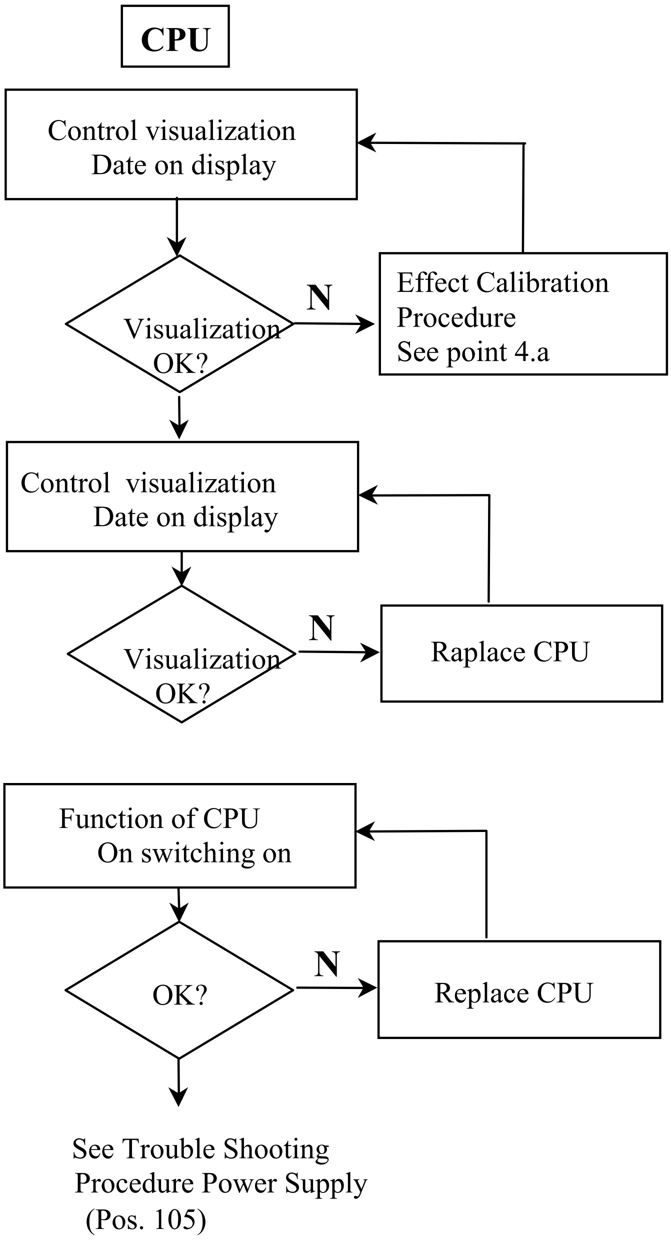
SPEED	9600 BAUD (septable 19200 or 38400 bps)
PARITA'	NOTHING
BITS LENGHT	8
STOP BITS	1

e) FEEDING block

The necessary tension for the working of the board +5V and it ‘s inserted through the connector J19.

5.2.5. Flow Chart no. 3

Il Flow Chart n°3 mostra il diagramma di flusso per quanto riguarda la CPU pos. 107



5.2.6. Access to the module

a) Disconnect the VES MATIC 30 / VES MATIC 30 PLUS from the power supply, as in paragraph 1.

b) Gain access to the inside of the instrument as reported in paragraph 2.

c) Losen the screw pos. 205 and remove yhe case pos. 007

d) Disconnect the cable on CPU board pos. 107

e) Unscrew the hexagonal spacer pos. 206

f) Remove the CPU board module pos. 107

g) Replace the faulty components, as reported in Appendix B.

Appendix B: Examination of the possible faults

An examination of the main defects is performed according to the table reported below:

Type of failure	The timer is not working.
Local effect	The clock on the display is not updated.
General effect	The date is not memorized in the instrument.
Action	1. Replace the CPU board.

Type of failure	The timer is not working.
Local effect	The RAM works.
General effect	The date is not memorized in the instrument.
Action	2. Replace the CPU board.

Type of failure	The program does not start up, or anomalies appear when switching on the instrument.
Local effect	The display does not visualize anything, or gives wrong information.
General effect	It is not possible to use the Ves Matic. There is no visualization on the display, or incorrect characters appear.
Action	1. Replace the CPU board.

5.3. SERVICE MANUAL DISPLAY/KEYBOARD MODULE (pos. 072/097)

5.3.1. General
5.3.1.1. Aim
5.3.1.2. Applicability
5.3.2. Relative documentation
5.3.3. Relative instrumentation
5.3.4. Trouble shooting
5.3.4.1. Description of the module
5.3.5. Flow Chart no. 4
5.3.6. Access to the module
Appendix C: Examination of the faults.

5.3. <u>SERVICE MANUAL DISPLAY/KEYBOARD MODULE (Pos. 072/097)</u>

5.3.1. General

5.3.1.1. Aim

The present document reports details of the Trouble Shooting procedures relating to the Display/Keyboard module pos. 072 and 097 assembled on the VES MATIC 30/VES MATIC 30 PLUS.

5.3.1.2. Applicability

The recommendations contained in the present document are applicable to final servicing to ascertain the acceptability of the product.

5.3.2. Relative documentation

20102910 Scheme of the VES MATIC 30 / VES MATIC 30 PLUSsystem (in the current edition).

20102840 Scheme of the connectio of the Keyboard module of Vesmatic 30
20102620 Schema of the connection of the Display/keyboard interface Vesmatic 30

30111660 Layout of the display/keyboard module Vesmatic 30
30113720 Layout of the keyboard module Vesmatic 30.

5.3.3. Relative instrumentation

Multimeter Mod. FLUKE 8010A or equivalent.

Philips Laboratory Oscilloscope or equivalent.

Standard laboratory welder.

3-4 mm screw-drivers, pliers, standard laboratory tools.

Power supply (Pos. 105).

CPU board (Pos.107).

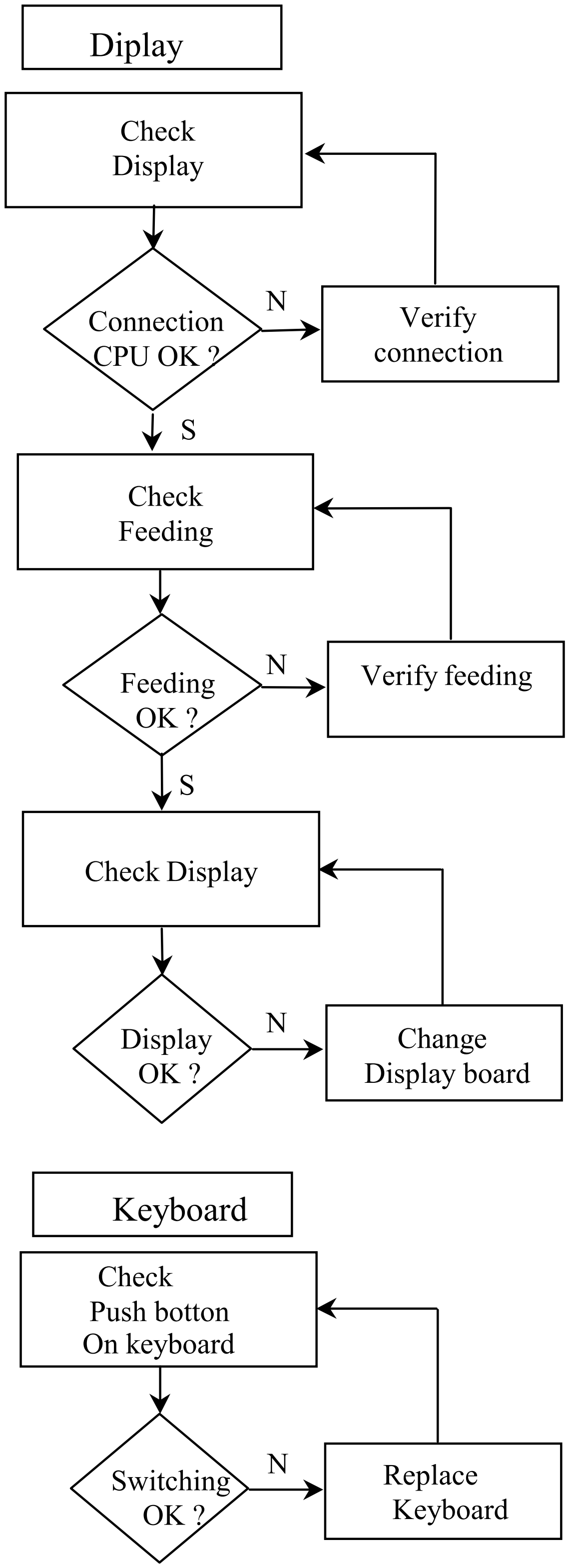
5.3.4. Trouble shooting

5.3.4.1. Description of the module

The Display/Keyboard form pos. 072/097 has made from the display display+keyboard boards and from the keyboard board. It’s interfaced from the CPU pos. 107 through the cable pos. 403, and this CPU have to be connected for to make work the form.

5.3.5. Flow Chart no. 4

The Flow Chart n° 4 shows the flow chart for the Trouble Shooting part's form Display/Keyboard pos. 072/097.



5.3.6. Access to the module

a) Turn off the feeding to the VES MATIC 30 / 30 PLUS like paragraph 1.

b) Come in to the unit opening the plug like paragraph 2.
c) Take off the interface cable connected on the board's connector CN1 pos. 072.

d) Unscrew the crews (pos. 304) on the board pos. 072 .

e) Take off the Display/Keyboard board pos. 072, taking off the cable that connectes the board to the display (CN2, CN3, CN4, CN5).

f) Change the components damaged like the Appendix C.

g) If the buttons 's keyboard board don't function verify the working with a setted tester, in a way to verify the continuity.

Appendix C: Examination of the possible faults

An examination of the main defects is performed according to the table reported below:

Type of failure	There is no visualization.
Local effect	The keyboard works and voltage is present in the display; the CPU works.
General effect	No characters appear on the display.
Action	1. Check that the display and CPU are connected to each other. 2. Replace the Display.

Type of failure	There is no visualization.
Local effect	The keyboard works and the CPU is correctly connected.
General effect	No characters appear on the screen.
Action	Check the power to the display.

Type of failure	There is no visualization.
Local effect	The keyboard works and power is present at the display; the CPU works.
General effect	No characters appear on the display.
Action	Replace the display.

Type of failure	Data cannot be introduced.
Local effect	The display and CPU are working.
General effect	There is no switching on the keys.
Action	Change the keyboard.

5.4. SERVICE MANUAL PRINTER INTERFACE MODULE Pos. 083

5.4.1. General
5.4.1.1. Aim
5.4.1.2. Applicability
5.4.2. Relative documentation
5.4.3. Relative instrumentation
5.4.4. Trouble shooting
5.4.4.1. Description of the module
5.4.5. Flow Chart no. 5
5.4.6. Access to the module
Appendix D: Examination of the faults.

5.4. SERVICE MANUAL PRINTER INTERFACE MODULE (pos. 083)

5.4.1. General

5.4.1.1. Aim

The present document reports in detail the Trouble Shooting procedures to be used in relation to the Printer Interface Module pos. 083, assembled on the VESMATIC 30 / VES MATIC 30 PLUS.

5.4.1.2. Applicability

The recommendations contained in the present document are applicable to the final servicing to ascertain acceptability of the product.

5.4.2. Relative documentation

20102910 Scheme of the VES MATIC 30 / 30 PLUS system (in the current version).

20102462 Electric scheme of the Printer Interface WT01 small.

30111340 Layout of the Printer Interface Board WT01 small

5.4.3. Relative instrumentation

Multimeter Mod. FLUKE 8010A or equivalent.

Philips Laboratory Oscilloscope or equivalent.

Standard laboratory welder.

3-4 mm screw-drivers, pliers, standard laboratory tools.

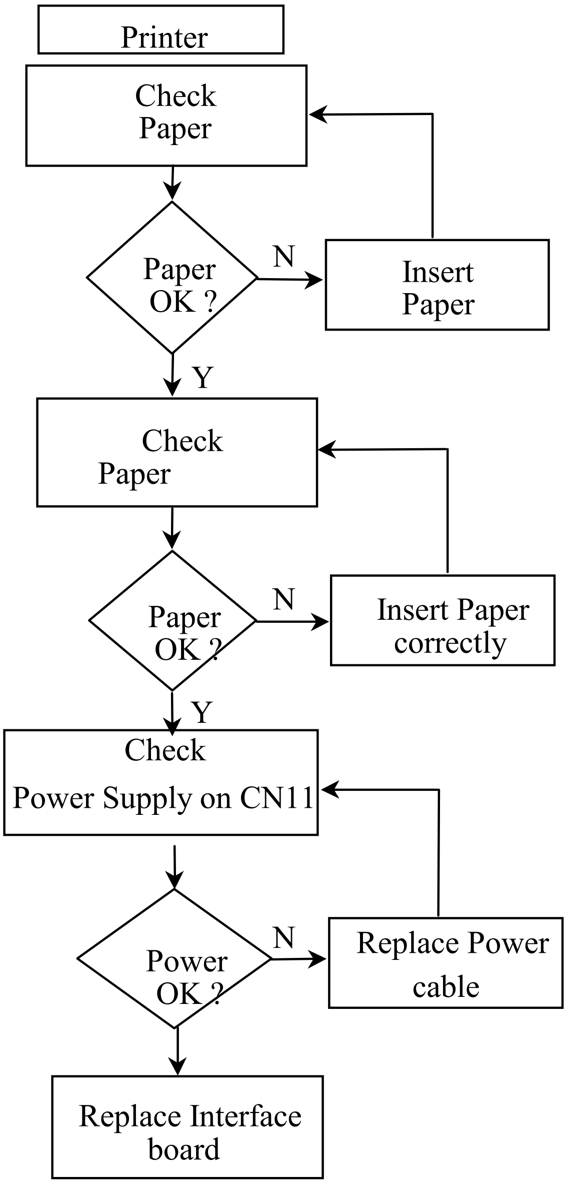
5.4.4. Trouble shooting

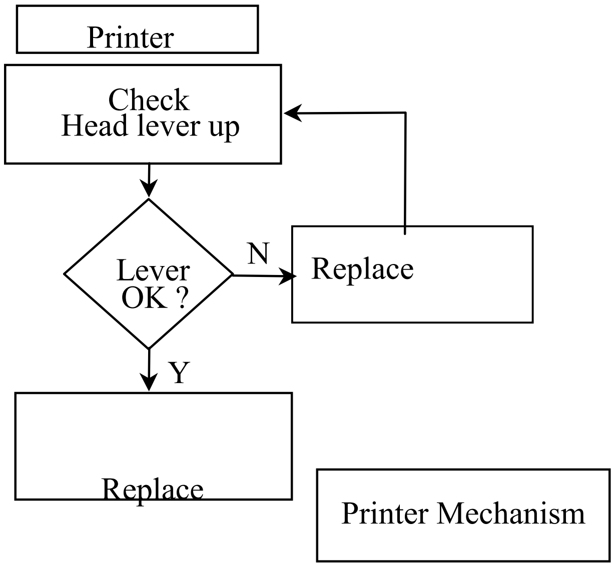
5.4.4.1. Description of the module

The intrerface printer module pos. 083, formed by an integrated circuit (U1) ATMEL AT908515, have to keep the printer mechanism, and the serial comunication with the instrument's cpu.
For to keep the printer mechanism we mean the paper feed, the keep of the sensorsof end paper and head up,the command of the thermic head dots.

5.4.5. Flow Chart no. 5

Interface module Trouble shooting.





off jammed paper

5.4.6. Access to the module

a) Disconnect from the power supply, as in paragraph 1.

b) Open the outer covering to gain access to the inside of the instrument, as in paragraph 2.

c) Disconnect the power supply cable on connector CN11.

d) Disconnect the serial cable connected on CN12.

e) Unscrew the screw pos. 217 and 219, remove tha case pos. 004.

f) Remove the Printer Interface module from the unit by unscrewing the screws, see layout 30200280 (ref. 4).

g) Remove the interface board, removing the screws indicated on the layout pos. 082

h) Substitute the faulty components, according to Appendix D.

Appendix D: Examination of the faults.

An examination of the main defects is performed according to the table reported below:

Type of failure	The printer does not print.
Local effect	The paper does not advance forward with the printed results.
General effect	Printing does not take place.
Action	Ensure that there is paper in the printer.

Type of failure	The power is present, but the printer does not print.
Local effect	The paper does not advance forward with the printed results.
General effect	The printer does not print.
Action	Check that the paper is inserted correctly and not jammed.

Type of failure	The paper is present and not jammed, but the printer does not print.
Local effect	The paper does not advance with the printed results.
General effect	The printer does not print.
Action	Check the power on CN11.

Type of failure	The printer does not print.
Local effect	The printer print in compress mode.
General effect	The printer does not print correctly.
Action	Check the mechanical parts and paper position.

Type of failure	The printer does not print.
Local effect	The motor feed remains blocked .
General effect	The printer does not print.
Action	Check the microswitch.and head lever position. Replace the board or printer mechanism.

5.5. <u>SERVICE MANUAL MOTORS AND CONTROLS BOARD pos. 086</u>

5.5.1. General

5.5.1.1. Aim

5.5.1.2. Applicability

5.5.2. Relative documentation

5.5.3. Relative instrumentation

5.5.4. Trouble shooting

5.5.4.1. Description of the module

5.5.5 Flow Chart no. 6

5.5.6. Access to the module

Appendix E: Examination of the faults.

5.5 SERVICE MANUAL MOTOTRS AND CONTROLS BOARD POS. 086

5.5.1 General

5.5.1.1. Aim

The present document reports in detail the Trouble Shooting procedures to be used in relation to the Motors and Controllers Board pos. 086, assembled on the VES MATIC 30 / 30 PLUS.

5.5.1.2. Applicability

The recommendations contained in the present document are applicable to the final servicing to ascertain acceptability of the product.

5.5.2. Relative documentation

20102910 Scheme of the VES MATIC 30 / 30 PLUS system (in the current version).

20102610 Electric scheme of the Motors and Controllers board.

30111650 Layout of the Motors and controllers board pos. 086.

5.5.3. Relative instrumentation

Multimeter Mod. FLUKE 8010A or equivalent.

Philips Laboratory Oscilloscope or equivalent.

Standard laboratory welder.

3-4 mm screw-drivers, pliers, standard laboratory tools.

Power supply pos.105

CPU pos. 107

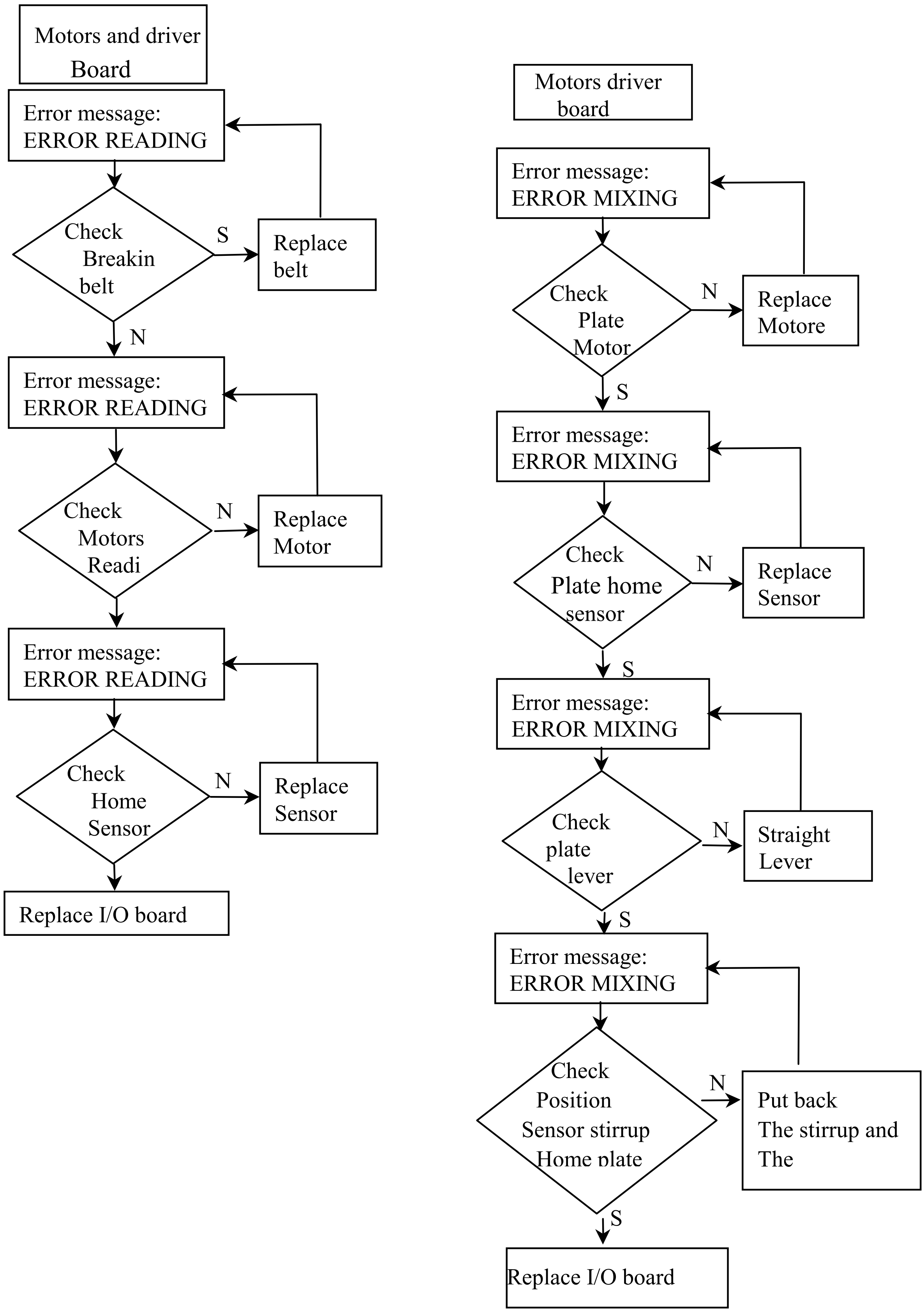
5.5.4. Trouble shooting

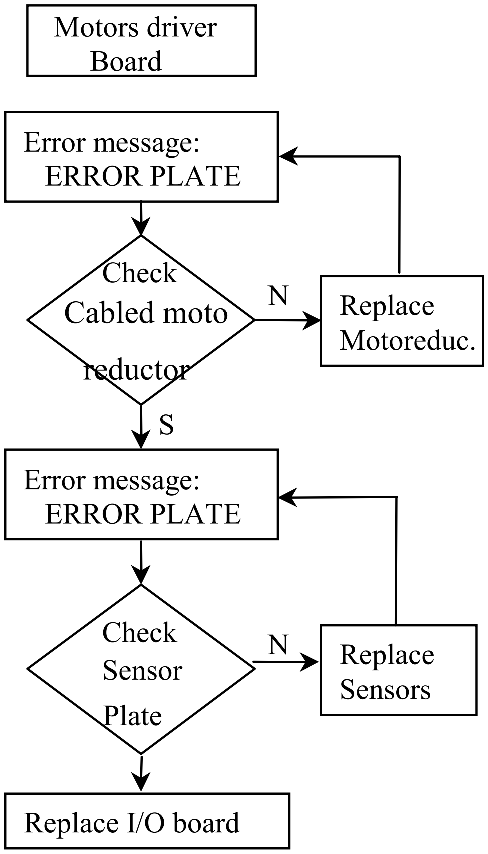
5.5.4.1. Description of the module

The Motors and Controls Board module of the VES MATIC 30 / VES MATIC 30 PLUS instrument is interfaced directly to the CPU pos. 107 from the connector CN9 and to the power via the connector CN10; the CPU must be connected in order for the module to function. This board controls the movement of the different motors actioning the sample plate, the control of the information deriving from the reading and home sensors, and of the traslator sensors position up and down.

5.5.5 Flow Chart no. 6

Trouble shooting phase in the Motors and Controls Board.





5.5.6. Access to the module

a) Disconnect from the power supply, as in paragraph 1.

b) Open the outer covering to gain access to the inside, as in paragraph 2.

c) Unscrew the screws pos. 240 and remove the carter pos. 020.

d) Disconnect the interface cable connected on CN9 and CN10.

e) Disconnect the others connected cables.

f) Replace the faulty components, according to Appendix E.

Appendix E: Examination of the faults.

An examination of the main defects is performed according to the table reported below:

Type of failure	The Self-Test starts up with the error message: ERROR READING.
Local effect	The data is not read, or is read incorrectly.
General effect	Error message; the instrument does not start up.
Action	1. Check that the cord is not damaged; if so, replace. 2. Check the function of the Home Sensor. 3. Check the connections to the motor. 4. Replace the I/O Board.

Type of failure	The Self-Test starts up with the error emssage: ERROR PLATE.
Local effect	The data is not read, or is read incorrectly. The plate does not rotate 90°.
General effect	Error message; the instrument does not start up.
Action	1.Check the microswitch for the position of the plate; replace microswitch. 2.Check the connections and the state of the DC motor. 3. Replace the I/O Board.

Type of failure	The Self-Test starts up with the error message: ERROR MIXING.
Local effect	The data is not read, or is read incorrectly. The plate does not rotate on its axis, or moves in an anomalous manner.
General effect	Error message; the instrument does not start up.
Action	1.Check the connections to the plate motor. 2.Check yhe connections and state of the Sensor Home Plate, replace if necessary. 3.Replace the I/O Board.

Appendix F:

HOST COMPUTER CONNECTION FOR VES-MATIC LINE INSTRUMENTS AND VES-MATIC 30 / 30 PLUS COMMUNICATION PROTOCOL.

Check that the connection cables are 3 wire connectors (Tx-Rx-Gnd) and are connected as follows:

VES CONNECTOR	HOST-COMPUTER CONNECTOR	
Type DB9	Type DB9	Type DB25
2	2	3
3	3	2
5	5	7

SPECIFICATIONS FOR THE ASYNCHRONOUS SERIAL COMMUNICATION PROTOCOL

Representation of the bytes transmitted on the serial line:

STX	BLK	BLK	LEN	LEN	ADD	ADD	COM	COM	D1	...	Dn	ETX	CHK	CHK

Each box represents 1 byte transmitted on the serial port. The pair of bytes will instead be packed in the memory and return to the value of 1 byte.

STX : Character ASCII '>' 0x3E

BLK : Block Number

LEN : Number of characters, from D1 to Dn (included)

ADD : Device ID (00 and FF = Reserved) Available range 01-7F

COM : Command ID

If COM=COM+0x80, the end of the block is given by ETX and CHK is not controlled.

D1.Dn : Command related data

ETX : Character ASCII 'CR' 0x0D

CHK : CheckSum (XOR from STX to Dn included)

The reply to the protocol will have to be part of the receiving device:

ACK / NAK	ADD	ADD	ETX

ACK : Character ASCII 0x06

If the command block has been correctly interpreted according to the protocol specifications

NAK : Character ASCII 0x15

If the command block is not compliant with protocol specifications

ADD : Device ID

If data transaction requires the use of more blocks, these will be numbered in progressive order starting from 0. Every transmission of more blocks should end with a block with a length equivalent to zero.

VES20/30 SERIAL COMMANDS AND PARAMETER FORMAT

Each command is interpreted and receives as reply 'ACK'=[0x06]+ID+CR

If a syntax error occurs or an incorrect command is issued, the reply will be 'NACK'=[0x15]+ID+CR

0x01: Request of version

Example:

From Host

>00000181+CR+00 *Asks unit with ID '01' to run command '81' (that is command '01' without checksum control)*

From ESR

>00190101VES MATIC 20New Rel. 1.00+CR+10

0x02: Request list of stored tests

The returned data field is formed by the number of tests stored in ASCII hex format (2 bytes) followed by15 byte separated by ';' which specify the type, date and time of the test.

Example:

From Host

>00000182+CR+00 *Asks unit with ID '01' to run command '82' (that is command '02' without checksum control)*

From ESR

>0031010203F1 28/04 15:41;F2 28/04 15:49;F2K 28/04 16:13+CR+15

0x03: Request test transmission

Example:

From Host

>0002018303+CR+00 *Asks unit with ID '01' to run command '83' (that is command '02' without checksum control) with parameter '03' indicating the number of tests that should be received.*

From ESR

The reply can be formed by more blocks, depending on the quantity of information

present in the test.

The unit transmits a 20 byte header with information regarding

- *Type of test 1 byte (0x01=F1, 0x02=F2, 0x03=F1K, 0x04=F2K)*
- *ESR settings <u>during the reception</u> 1byte (X X BO BE BI FP FD FT where FT= temperature correction flag 1 is ON, FD=Displayed results flag, FP=Printed results flag, BI=Internal bar code selection flag, BE=External bar code selection flag, BO= Barcode deselection flag)*
- *Number of samples 1 byte*
- *Cycle 1byte*
- *Temperature during test 1 byte*
- *Test date 10 byte hex-ascii*
- *Test time 5 byte hex-ascii*

Followed by a number of 40 byte fields equivalent to the "Number of samples" with the following format:

- *Position number 1 byte*
- *Status flag 1 byte*
- *Barcode 13 byte Hex-ascii*
- *ESR results 24 byte*
- *Katz index 1 byte*

Flag Status can acquire the following values:

- *0x81 Abnormal cuvette*
- *0x82 High cuvette*
- *0x84 Low cuvette*
- *0x88 Empty cuvette*
- *0x00 Ordinary cuvette*

If the test carried out is of type F1, the ESR results will be equivalent to the first byte of the 24. The Katz index shall not be taken into account.

If the test carried out is of type F2, the ESR results will be equivalent to the first two bytes of the 24. The Katz index will also be taken into account

If the test carried out is of type F1K, the ESR results will be equivalent to the first 12 bytes of the 24. The Katz index shall not be taken into account

If the test carried out is of type F2K, the ESR results will be within the first 24 bytes. The Katz index will also be taken into account.

0x04: Command to request the unit status

The unit status is constituted by 2 ASCII hex integers represented by means of two sets, each with 4 bytes.

The *first four* bytes contain the following information:

Bit value:

Bit	Code
0	Test type
1	Test type
2	Test type
3	Reset in progress
4	Check -Device expired
5	Open cover
6	Sample reading in progress
7	Mixing in progress
8	Centrifugation in progress
9	Test aborted
10	Error condition
11	- -
12	- -
13	- -
14	- -
15	- -

The three *Type of test* bits 0,1 and 2 represent:

- 0x01 F1 Normal
- 0x02 F2 Normal
- 0x03 F1 Kinetic
- 0x04 F2 Kinetic

The second group of 4 bytes represents the time in seconds needed to complete the test in progress.

Example:

From Host

Send command >00000184+CR+00 00 Ask the unit with ID '01' to run command '0x84' (that is command '0x04' without checksum control)

From ESR

>00080104008105CD+CR+4D

The status is codified as 0x0081, that is an ordinary F1 test in progress and a mixing stage in progress. The seconds needed to complete the test are 0x05CD, that is 1485 seconds.

0x05: Reading the Setting register

The unit returns the value of the setting register in 2 ASCII hex bytes.

The register bit have a Boolean value (1=ON)

Bit	Code
0	Temperature correction
1	Displayed results
2	Printed results
3	Internal barcode
4	External barcode
5	Disabled barcode
6	- -
7	- -

Example:

From Host

Send command >00000185+CR+00 00 Ask the unit with ID '01' to run command '0x85' (that is command '0x05' without check sum control)

From ESR

>0002010525+CR+3F

Consequently: temperature correction is ON, Printed results is ON and the Barcode is disabled.

0x06: Writing in the Setting register

This command enables to set the Setting register.

Example:

From Host

>0002018682+CR+00 Ask the unit with ID '01' to run command '0x86' with data field 0x82 (that is command '0x06' without checksum control). This sets: Temperature correction OFF, Displayed results ON, Printed results OFF, Internal barcode ON.

From ESR

Replies ***'ACK'*** *for positive results; otherwise it replies* ***'NACK'***

0x07: Start test

The command enables to start and select the type of test.

The type is codified as follows:

Type	Code
0x01	F1 Normal
0x02	F2 Normal
0x03	F1 Kinetic
0x04	F2 Kinetic

Example:

From Host

Sends command >0002018703+CR+00

Ask the unit with ID ‘01‘ to run command ‘0x87’ with data field 0x03 (that is command ‘0x07’ without checksum control). This start the F1 kinetic test.

From ESR

*Replies **‘ACK’** for positive results; otherwise it replies **‘NACK'***

0x08: Block analysis

The command enables to block the test in progress.

Example:

From Host

Send command >00000188+CR+00

Ask the unit with ID ‘01‘ to run command ‘0x88’ (that is command ‘0x08’ without checksum control).

From ESR

*Replies **‘ACK’** for positive results; otherwise it replies **‘NACK'***

0x09: Read Barcode

It reads the barcode stored in the requested position.

Positions range from 0 to 19 for VES20.

Example:

From Host

Send command >000201890D+CR+00

Ask the unit with ID ‘01‘ to run command ‘0x89’ (that is command ‘0x09’ without check sum control) with data field 0x0D, that is ask the barcode to be sent to position 13.

From ESR

>000D0109 . . . . +6C

The units sends the 13 character code related to the requested barcode.

0x0A: Write barcode

This command enables the write the barcode in the desired position during the test cycle.

Positions range from 0 to 19 for VES20.

Example:

From Host

Send command >000F018A07ABCDEFGHILMNO+CR+00

Ask unit with ID '01' to run command '0x8A' (that is command '0x0A' without checksum control) with data field 07ABCDEFGHILMNO. This enables to write the bar code "ABCDEFGHILMNO" in position 0x07.

From ESR

'ACK' *if the reply is positive; otherwise* ***'NACK'***

0x0B: Read Date and Time

This command enables to read the internal timer of the unit. The reply is formatted with 6 ASCII hex characters (12 byte) that refer to: hour, minutes, seconds, date, month and year.

Example:

From Host

Send command >0000018B+CR+00

Ask unit with ID '01' to run command '0x8B' (that is command '0x0B' without checksum control).

From ESR

>000C010B0B14040C0C00+CR+4D

The data field provides the following data: 11:20:04 hours with date 12/12/00

0x0C: Set date and time

This command enables to set the internal timer of the unit. The command data field is formatted with 6 ASCII hex characters (12 byte) that refer to: hour, minutes, seconds, date, month and year.

Example:

From Host

Send command >000C018C0C00000F0601+CR+00

Ask unit with ID '01' to run command ‘0x8C’ (that is command ‘0x0C’ without checksum control) with data field 0C00001F0601. This enables to set the timer at 12:00:00 hours and with a 15/06/01 date .

From ESR

‘ACK’ *if the reply is positive; otherwise* ***‘NACK’***

0x0D: Read Check-Device

The command returns the value of the formatted Check-Device as ASCII hex integer (4 byte).

Example:

From Host

Send command >0000018D+CR+00

Ask unit with ID ‘01‘ to run command ‘0x8D’ (that is command ‘0x0D’ without checksum control).

From ESR

>0004010D0F99+CR+39

The Check-Device value is 0x0F99, that is 3993

The identification number of the samples (ID) can be entered manually or through the BAR CODE READER.

1. Before performing any connection, check that the presence of the following signals on the connector used for connection purposes (refer to the instruction manual of the bar code reader):

EXTERNAL DB9 CONNECTOR	SIGNAL
3	Data Rx from the scanner
5	GND
9	+ 5 V

2. Connecting the barcode reader to the unit

TECHNICAL INFORMATION:
The connection is performed using the 9-pin DB9 connector situated on the rear of the machine.
The electric levels of signals are RS232.
Communications are sent only from the bar code reader to the machine.
The baud rate is 9600 bit/s, the data format has 8 data bits, 1 stop bit and no parity bit.
The communication protocol is ASCII, the read bar code must end with a Carriage return character (0x0d).

Appendix H: FIRMWARE UPGRADE FOR THE VES MATIC 30 AND VES MATIC 30 PLUS INSTRUMENT

VES20NEW & VES30NEW

PROGRAMMING MANUAL

Ver. 1.1 - 23.07.01

PROGRAMMING SOFTWARE INSTALLATION

Create the folder C:\AVRTOOLS directly on C:
Copy the file Atmelisp.exe from floppy disk to C:\AVRTOOLS.
The file Atmelisp.exe is a compressed file that when started decompress all the files it contains.
To start the 'extraction' procedure start the program C:\AVRTOOLS\ATMELISP.EXE with double click.
Click the OK button when the extracting program (UnZip) warning you that the shareware release of the program isn't registred.
Then insert 'C:\' in the dialog box to set the destination of the extracted files.
Now all the files will be copied in the folder C:\AVRTOOLS\ATMELISP, ed it is possible to start the program ISP.EXE

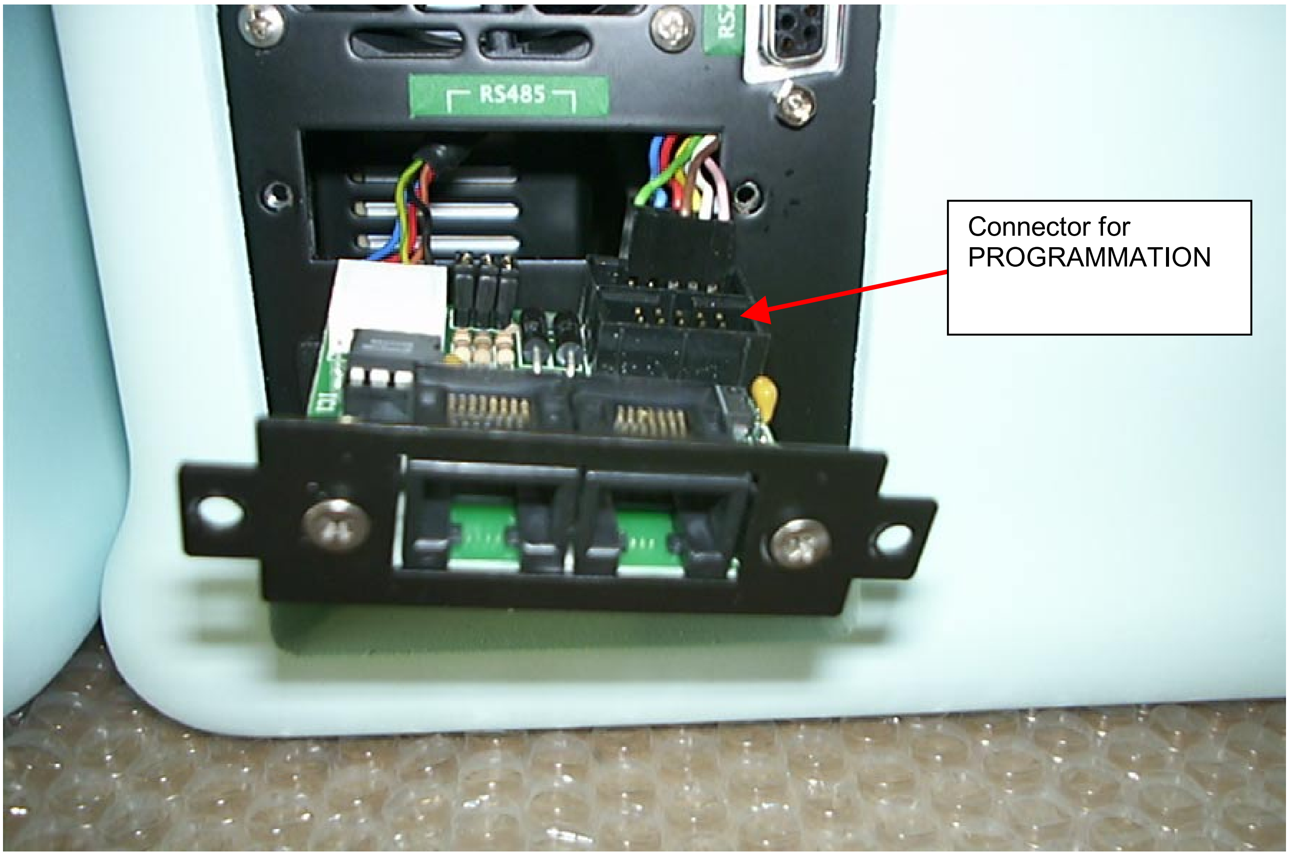
COPYING THE FILE TO BE TRANSFERRED TO VES20/30

Copy the file to be transferred in the memory of VES20/30 in the folder C:\AVRTOOLS\ATMELISP.
The name of this file will be VES30.HEX for Vesmatic30 New and VES20.HEX for Vesmatic20 New.
This contains the program of the instrument. The name of the file will remain the same for every new version of the program it contains.
So if it will be necessary to upgrade the instrument with a new program release a new file called VES30.HEX or VES20.HEX will be sent to you. Then you have to overwrite the old file with the new one.

PROGRAMMING THE INSTRUMENT VES20/30

Turn off the power switch and disconnect the mains cable.
Take off the screws that block the panel on the top of the mains switch and extract the panel. Be careful to not disconnect the internal cables. (see the photo)

Connect the Programming Cable included in the programming kit to the parallel port LPT1 of the Personal Computer. Connect the other side of the cable to the 10-ways male connector on the board fixed to the panel (see photo).



Connect the 9-ways D-sub male connector (Programming Key), included in the Programming Kit, to the female connector 'RS232' placed near the programming panel.
Insert the mains cable and turn on the Instrument.

PROGRAMMING PROCEDURE

Start the program ISP.EXE on the Personal Computer.
Select 'Project' from the main menu. And then select 'Open Project'.
Browse the file VES30NEW.AVR in the folder C:\AVRTOOLS\ATMELISP and press OPEN.
Then three windows will open: 'Project Manager', 'Program Memory', and 'EEPROM Memory'.

SAVING THE SETUP DATA OF THE INSTRUMENT

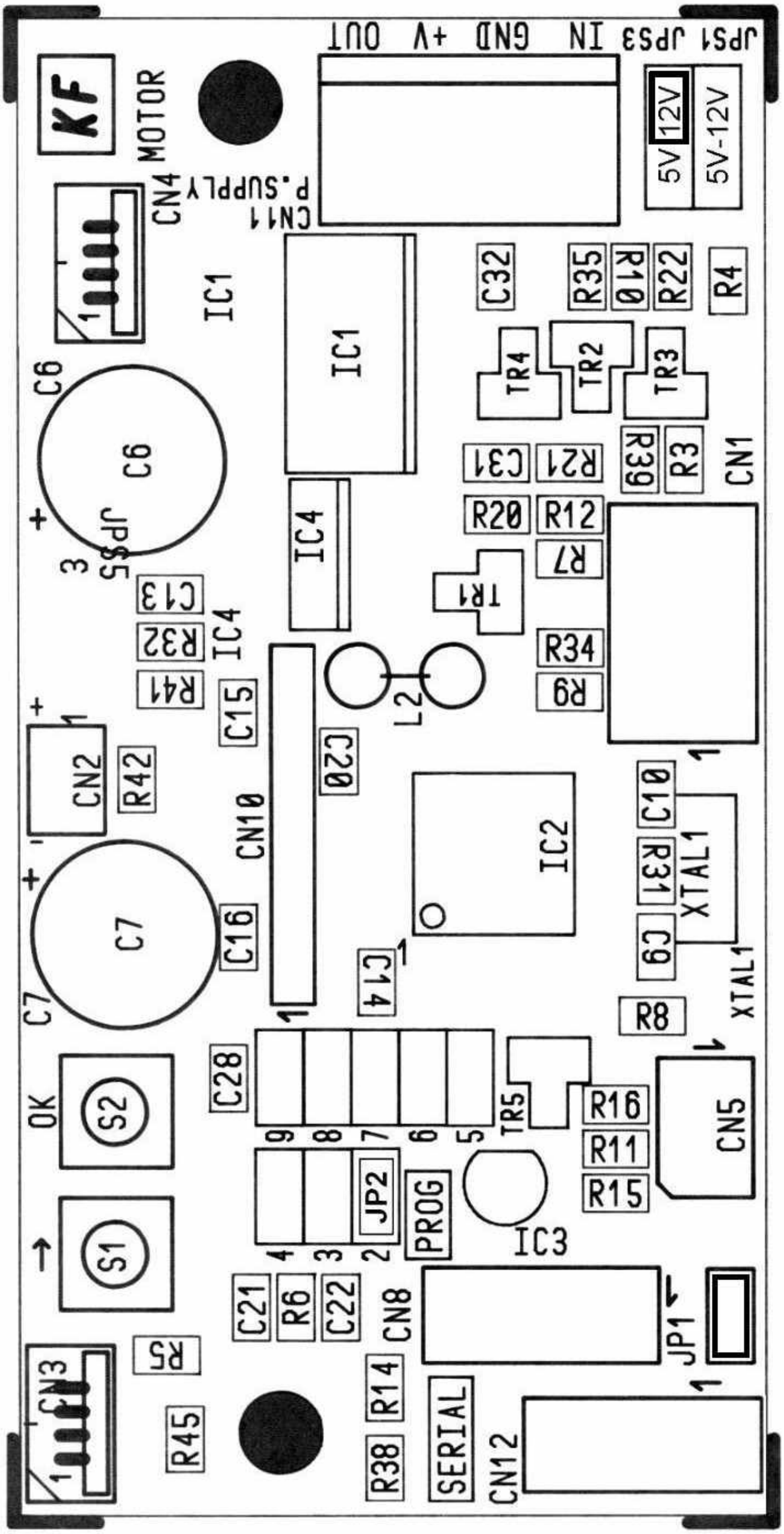
WARNING**: THE PROGRAMMING PROCEDURE WILL ERASE ALL THE MEMORY OF CPU, CAUSING THE LOST OF ALL SETUP DATA. BEFORE TO START PROGRAMMING YOU HAVE TO READ THE SETUP DATA FROM THE INSTRUMENT MEMORY AND THEN RESTORE IT AFTER THE DOWNLOAD OF THE PROGRAM.**
TO READ THE SETUP DATA FOLLOW THIS PROCEDURE:

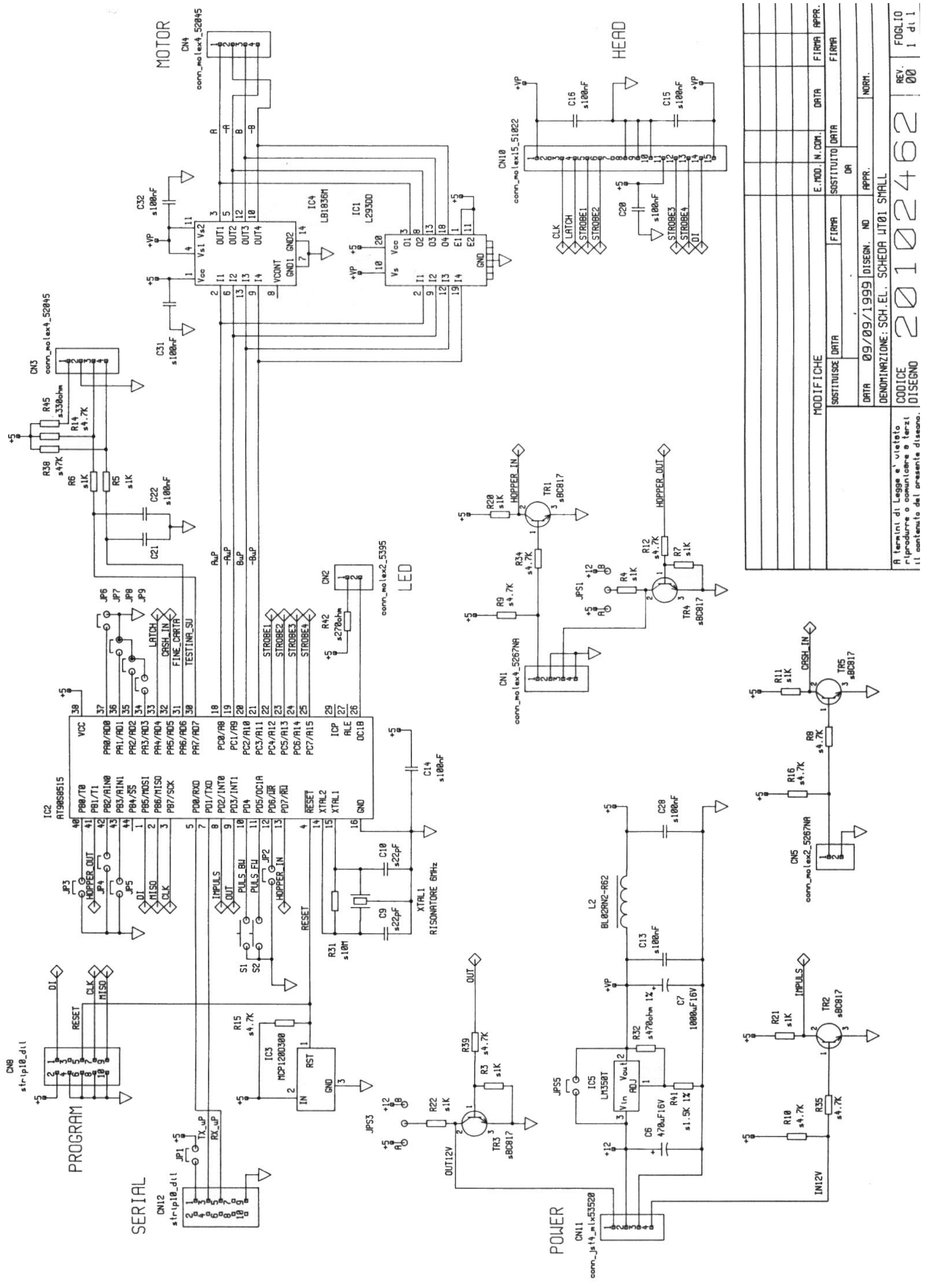
Select Program from the main menu, and then 'Read EEPROM'.

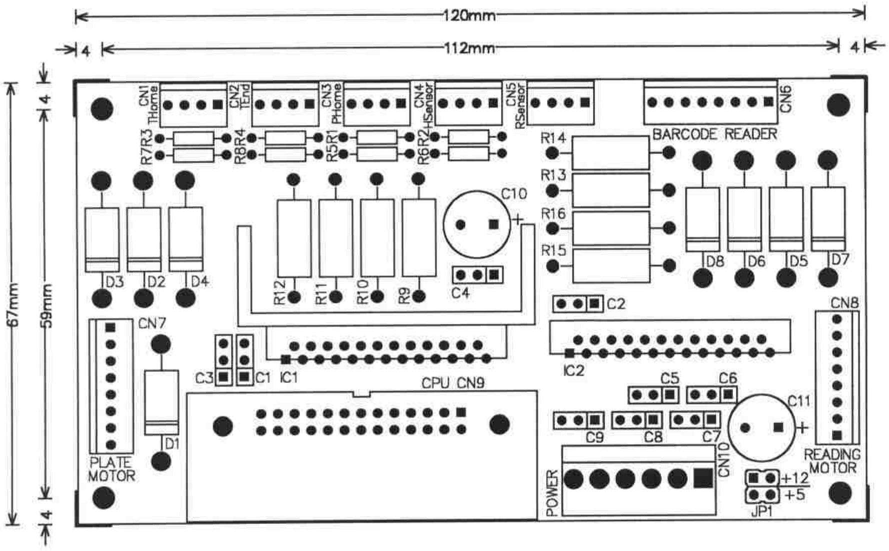
START PROGRAMMING

A. Select 'Program', and then 'Auto-Program Options'. Check on all the available options except 'Reload files' and 'Program Security bits' that must be de-selected and press OK.
B. Press F5 to start programming.
C. If during the procedure there are errors the program will inform you, otherwise no message will be displayed. If there are errors please check all the connections.
D. Close the program selecting 'Project' and then 'Close Project'. If the program ask you to save the EEPROM data always select No.
E. Exit the program selecting Project and then 'Exit'.

Appendix I: LAYOUT FOR ELECTRONIC CONTROL BOARD AND SCHEMATICS




MOTOR
HEAD
LED
PROGRAM
SERIAL
POWER
AT90S8515
LB1836M
L293DD
MCP120300
LM350T
MODIFICHE
DATA 09/09/1999
DENOMINAZIONE: SCH.EL. SCHEDA WT01 SMALL
CODICE DISEGNO
FOGLIO 1 di 1



MODIFICHE

E.MOD.	N.COM.	DATA	FIRMA	APPR.

LAVAGGIO

SCALE: 1.00

RASATURA h=

MATERIALE

SPESS. Cu

FINITURA

TRATT.

SOSTITUISCE — DATA : — FIRMA

SOSTITUITO DA — DATA — FIRMA

EVEREX

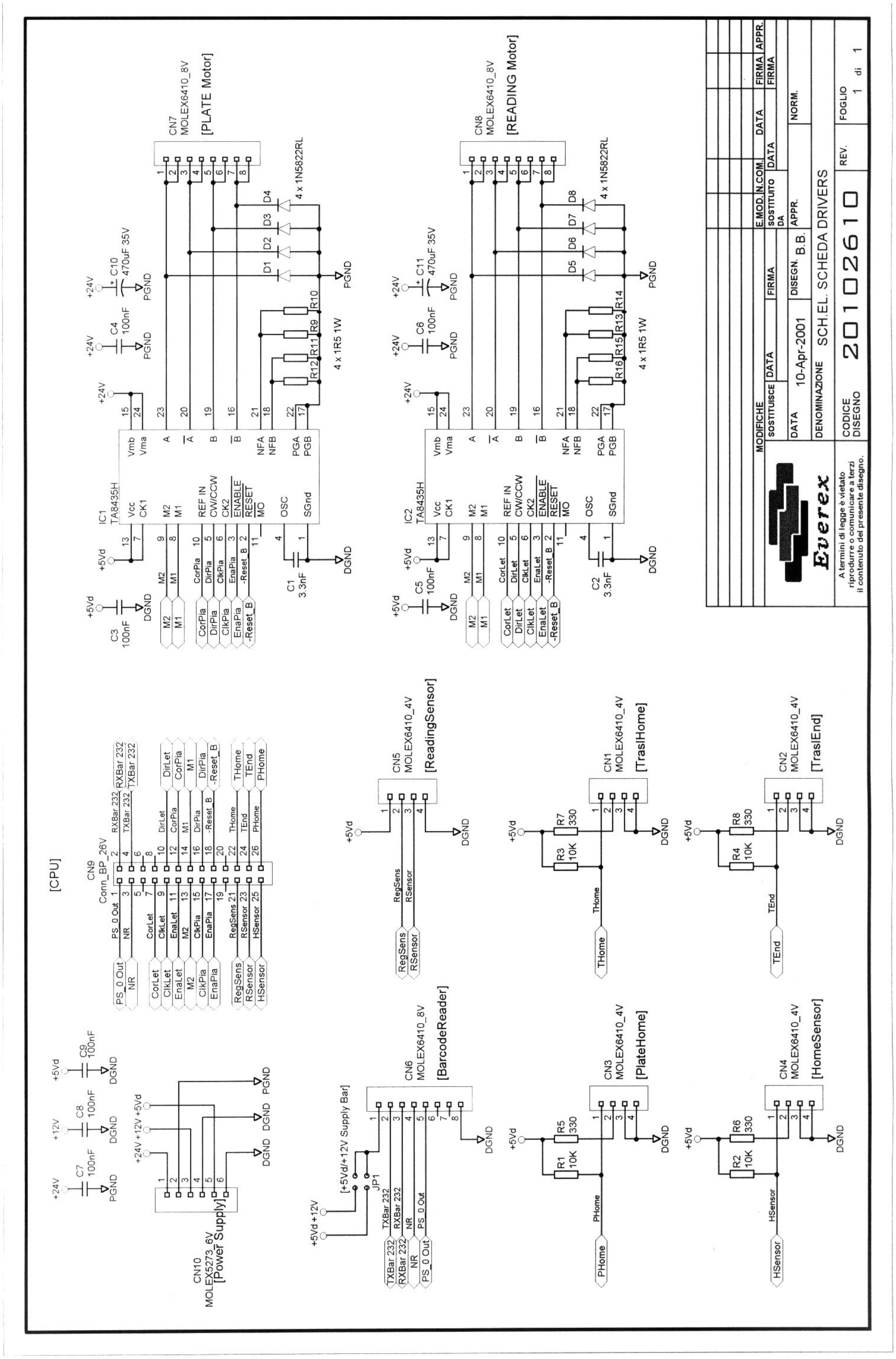
DATA : 17-Apr-2001 — DISEGN. — APPR. — NORM.

DENOMINAZIONE : SCHEDA DRIVERS MOTORI

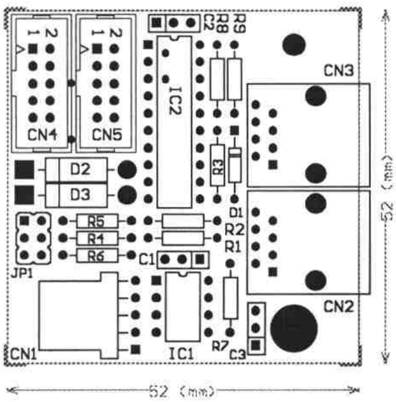
CODICE DISEGNO 30111650

REV. 00

FOGLIO 1 DI 1

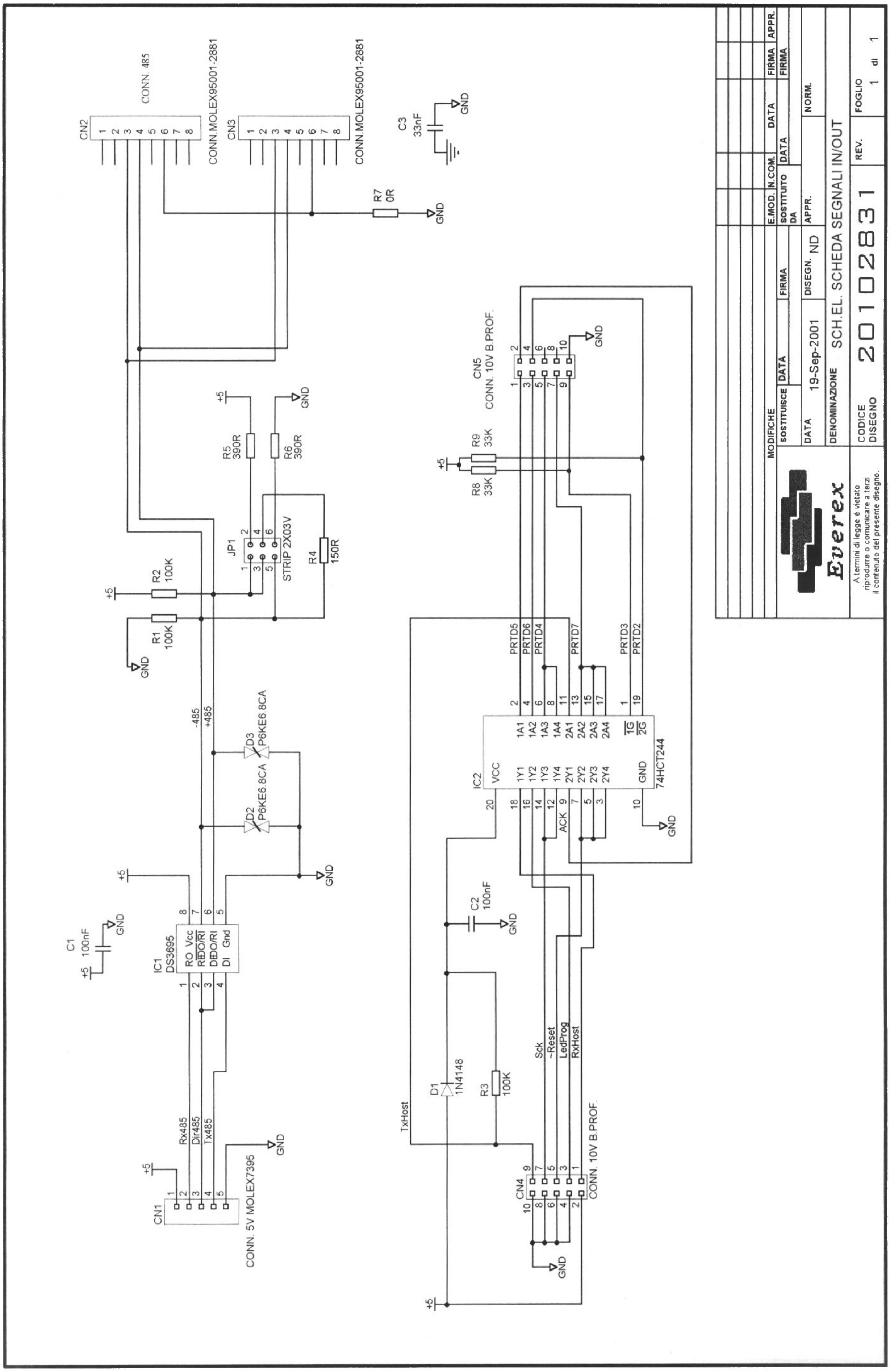


CN7
MOLEX6410_8V
[PLATE Motor]
CN8
MOLEX6410_8V
[READING Motor]
IC1
TA8435H
IC2
TA8435H
4 x 1N5822RL
4 x 1R5 1W
C10
470uF 35V
C11
470uF 35V
[CPU]
CN9
Conn_BP_26V
CN5
MOLEX6410_4V
[ReadingSensor]
CN1
MOLEX6410_4V
[TraslHome]
CN2
MOLEX6410_4V
[TraslEnd]
CN6
MOLEX6410_8V
[BarcodeReader]
CN3
MOLEX6410_4V
[PlateHome]
CN4
MOLEX6410_4V
[HomeSensor]
CN10
MOLEX5273_6V
[Power Supply]
[+5Vd/+12V Supply Bar]
JP1
MODIFICHE
E.MOD.
N.COM.
DATA
FIRMA
APPR.
SOSTITUISCE
DATA
SOSTITUITO DA
DATA
FIRMA
DATA
10-Apr-2001
DISEGN.
B.B.
APPR.
NORM.
DENOMINAZIONE
SCH.EL. SCHEDA DRIVERS
CODICE DISEGNO
20102610
REV.
FOGLIO
1 di 1
Everex
A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno.

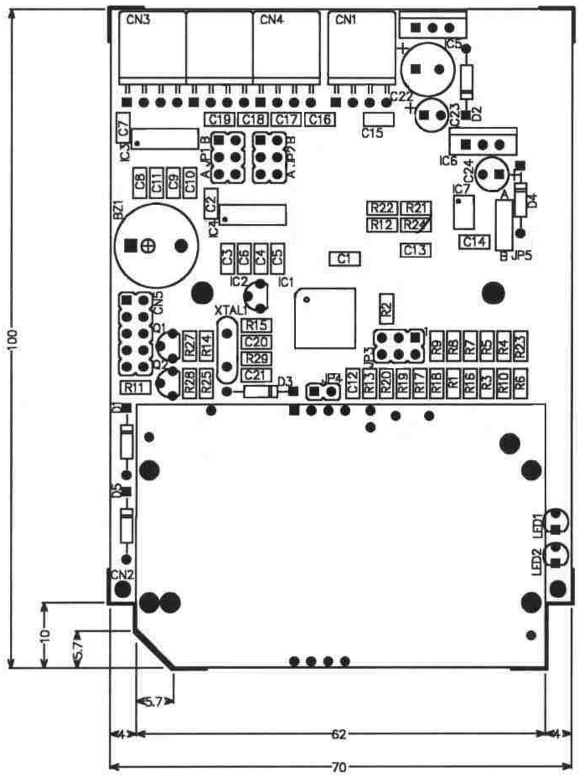


MODIFICHE

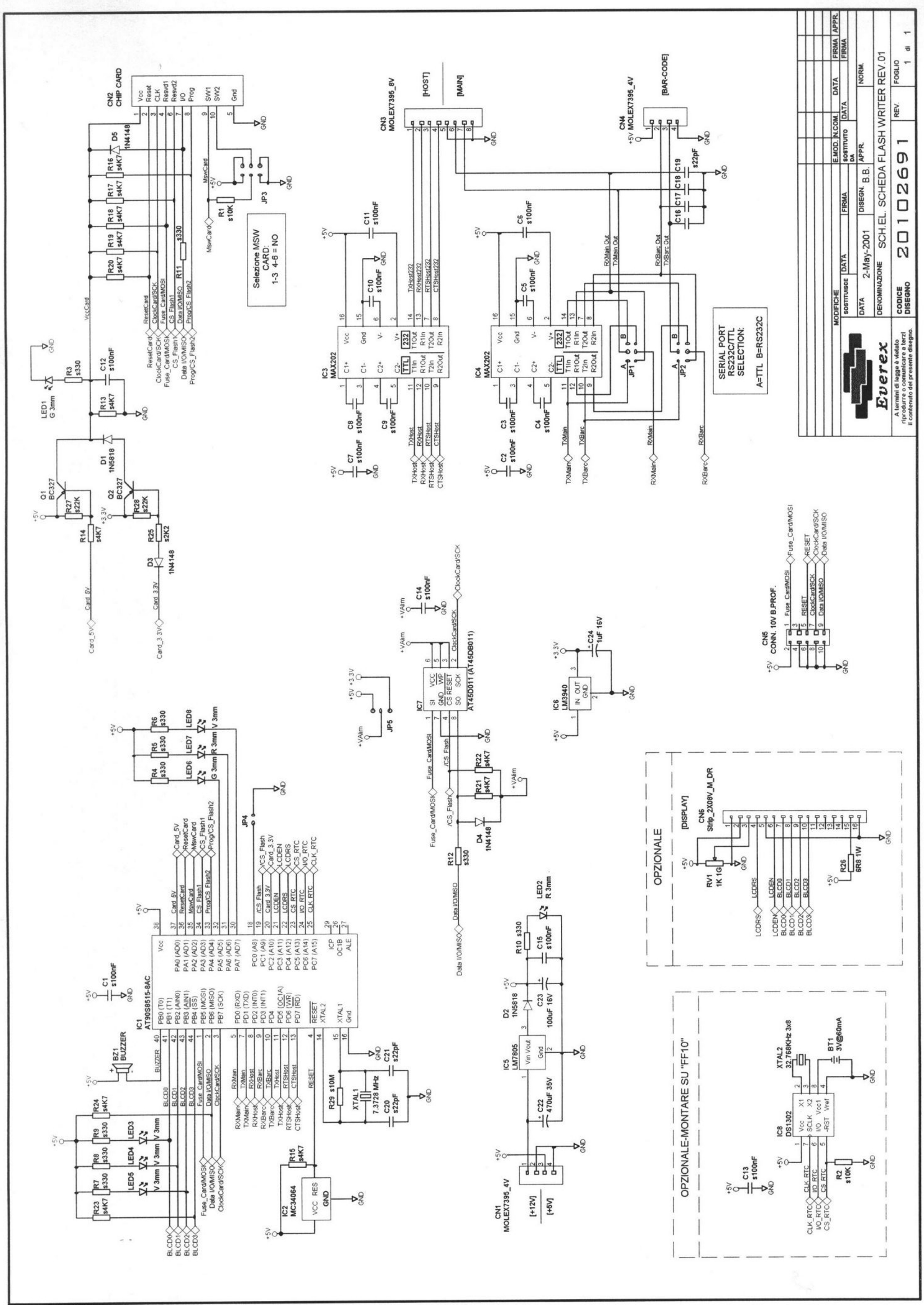
LAVAGGIO		RASATURA h=		E.MOD.	N.COM.	DATA	FIRMA	APPR.
	SCALE: 1.00	MATERIALE		FINITURA				
		SPESS. Cu		TRATT.				
Everex S.r.l.		SOSTITUISCE	DATA :	FIRMA	SOSTITUITO DA	DATA		
						FIRMA		
		DATA : 19-Sep-2001	DISEGN. ND	APPR.	NORM.			
		DENOMINAZIONE : SCHEDA SEGNALI IN/OUT RS485/PROG						
A termini di legge e' vietato riprodurre o comunicare a terzi il contenuto del presente disegno		CODICE DISEGNO	30113481	REV.	FOGLIO DI			



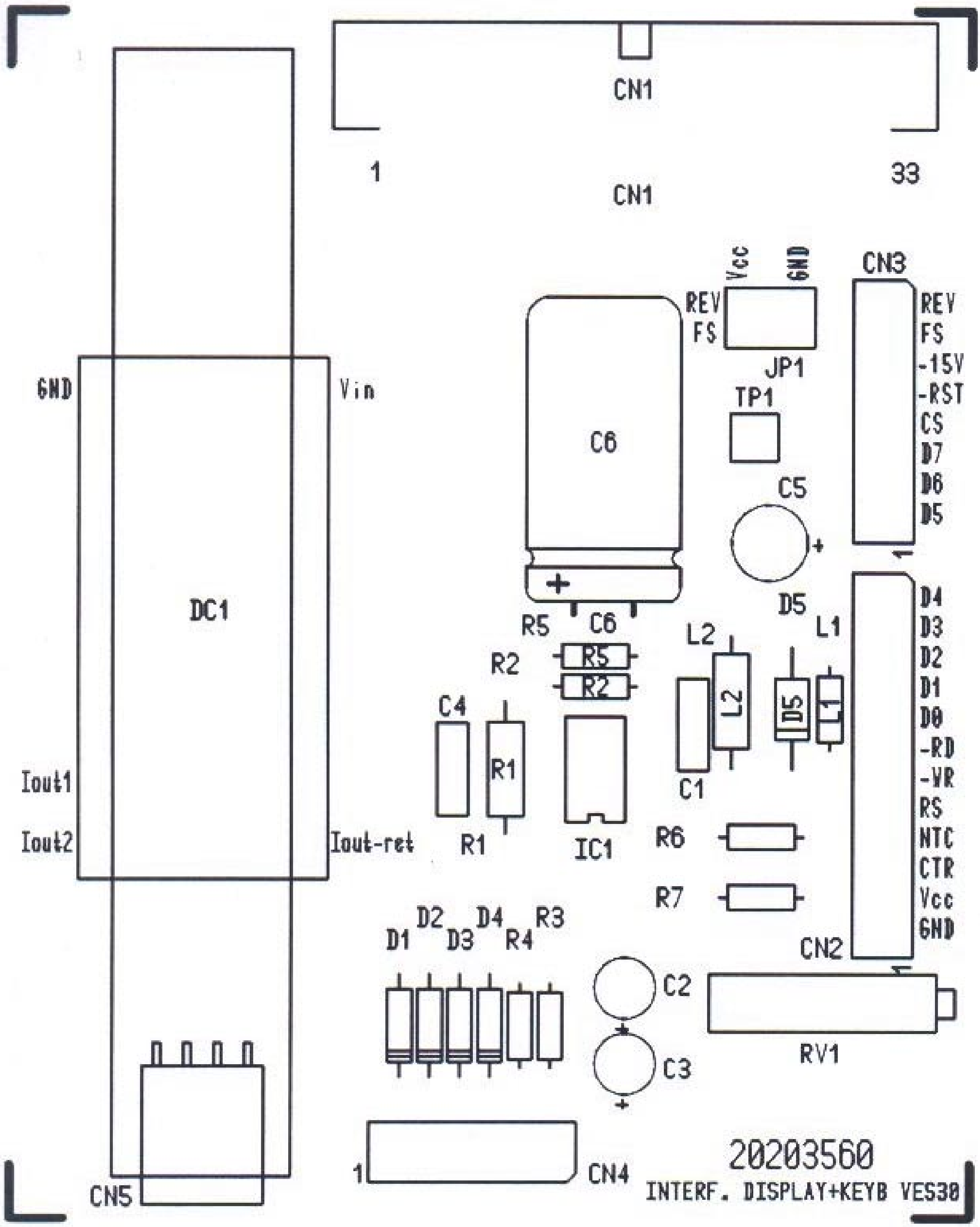
CN2
CONN. 485
CONN.MOLEX95001-2881
CN3
CONN.MOLEX95001-2881
C3
33nF
GND
R7
0R
+5
R5
390R
R6
390R
JP1
STRIP 2X03V
R4
150R
R2
100K
R1
100K
-485
+485
D3
P6KE6.8CA
D2
P6KE6.8CA
C1
100nF
IC1
DS3695
RO Vcc
RE/DO/RI
DE/DO/RI
DI Gnd
CN1
CONN. 5V MOLEX7395
Rx485
Dir485
Tx485
CN5
CONN. 10V B.PROF.
R9
33K
R8
33K
PRTD5
PRTD6
PRTD4
PRTD7
PRTD3
PRTD2
IC2
74HCT244
VCC
GND
ACK
C2
100nF
D1
1N4148
R3
100K
TxHost
Sck
~Reset
LedProg
RxHost
CN4
CONN. 10V B.PROF.
MODIFICHE
SOSTITUISCE
DATA
E.MOD.
N.COM.
SOSTITUITO DA
FIRMA
APPR.
NORM.
DISEGN. ND
19-Sep-2001
DENOMINAZIONE
SCH.EL. SCHEDA SEGNALI IN/OUT
CODICE DISEGNO
20102831
REV.
FOGLIO
1 di 1
Everex
A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno.

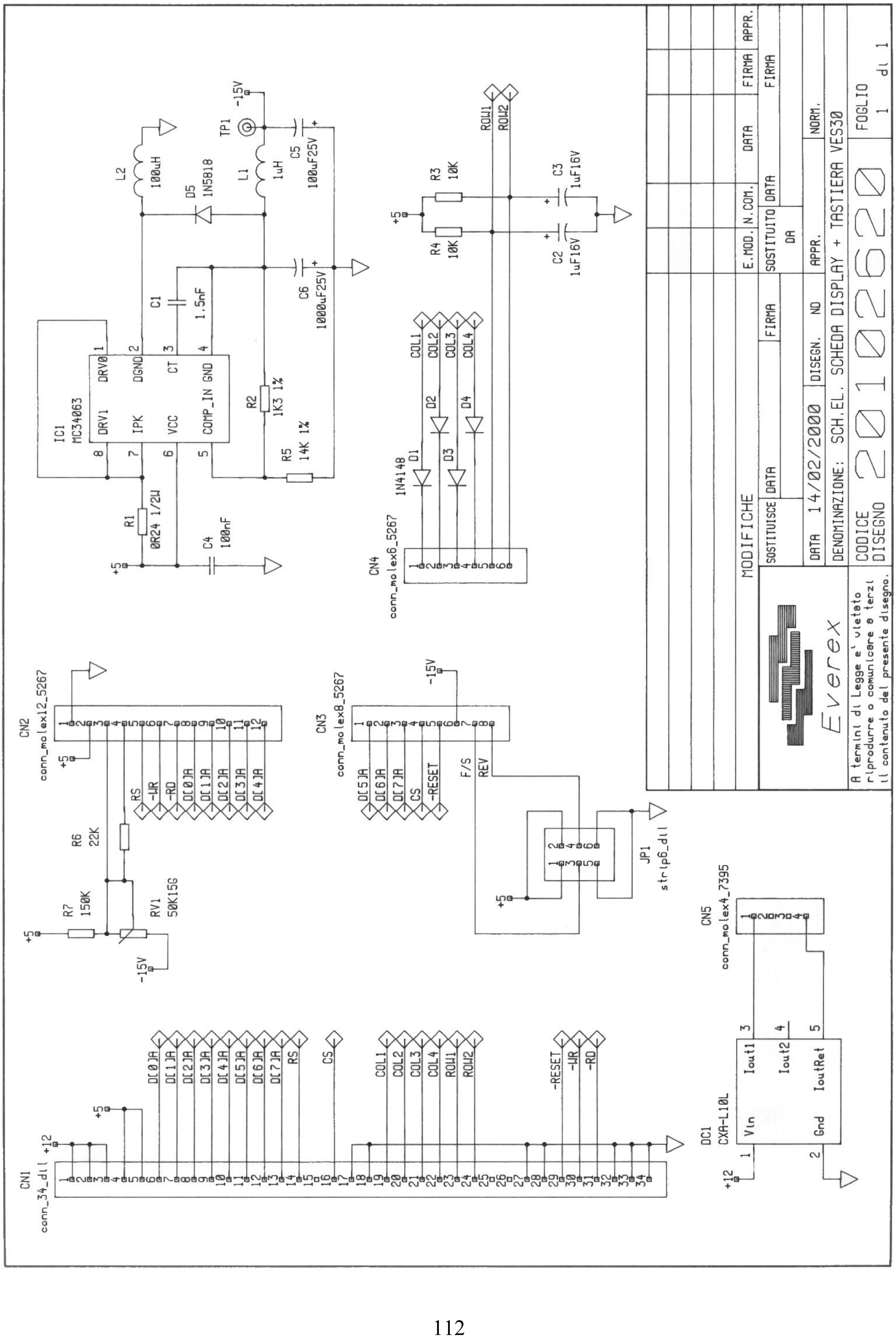


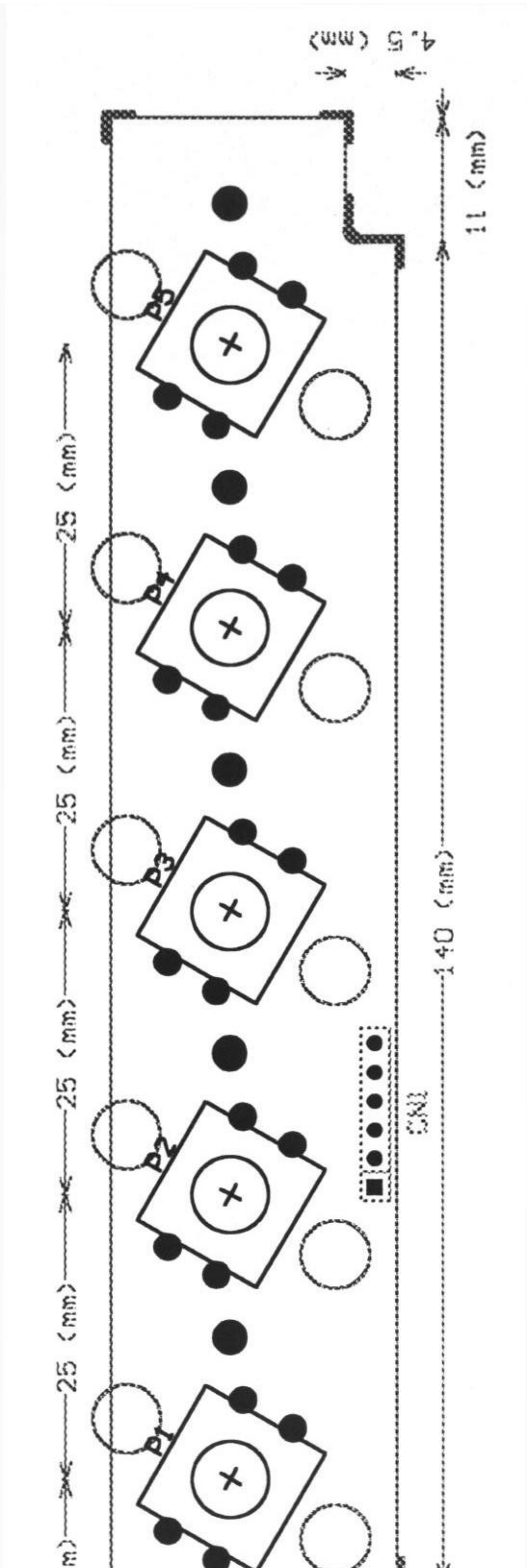
MODIFICHE							
LAVAGGIO	RASATURA h=		E.MOD.	N.COM.	DATA	FIRMA	APPR.
SCALE: 1.00	MATERIALE		FINITURA				
	SPESS. Cu		TRATT.				
EVEREX	SOSTITUISCE	DATA : / FIRMA	SOSTITUITO DA	DATA / FIRMA			
	DATA : 2-May-2001	DISEGN.	APPR.		NORM.		
	DENOMINAZIONE : SCHEDA FLASH WRITER REV.01 VERS.V230&V20N						
A termini di legge e' vietato riprodurre o comunicare a terzi il contenuto del presente disegno	CODICE DISEGNO	30114100	REV. 00	FOGLIO 1 DI 1			

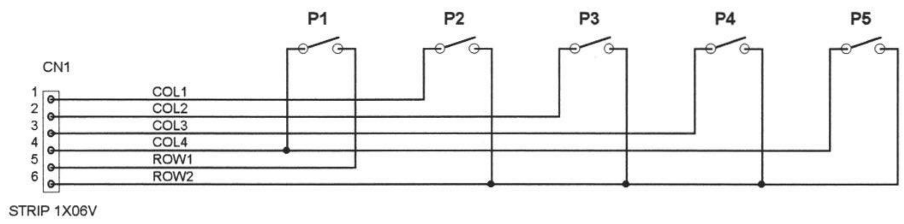


SCH.EL. SCHEDA FLASH WRITER REV.01
20102691
2-May-2001
B.B.
Everex
OPZIONALE
OPZIONALE-MONTARE SU "FF10"
SERIAL PORT RS232C/TTL SELECTION:
A=TTL B=RS232C
Selezione MSW CARD:
1-3 4-6 = NO
AT90S8515-8AC
MAX202
AT45D011 (AT45DB011)
LM7805
LM3940
MC34064
DS1302


CN1
1
33
CN1
Vcc
GND
CN3
REV
FS
REV
FS
-15V
-RST
CS
D7
D6
D5
JP1
TP1
C6
C5
GND
Vin
DC1
D4
D3
D2
D1
D0
-RD
-WR
RS
NTC
CTR
Vcc
GND
D5
L1
L2
R5
C6
R2
C4
R1
C1
IC1
R6
R7
Iout1
Iout2
Iout-ret
D1
D2
D3
D4
R4
R3
CN2
C2
C3
RV1
CN4
CN5
20203560
INTERF. DISPLAY+KEYB VES30


IC1 MC34063
DRV0 DGND CT GND DRV1 IPK VCC COMP_IN
L2 100uH
D5 1N5818
L1 1uH
TP1
-15V
C5 100uF25V
C6 1000uF25V
C1 1.5nF
R2 1K3 1%
R5 14K 1%
R1 0R24 1/2W
C4 100nF
+5
R3 10K
R4 10K
C3 1uF16V
C2 1uF16V
ROW1
ROW2
COL1 COL2 COL3 COL4
D1 D2 D3 D4 1N4148
CN4 conn_molex6_5267
CN2 conn_molex12_5267
RS -WR -RD D[0]A D[1]A D[2]A D[3]A D[4]A
R6 22K
R7 150K
RV1 50K15G
CN3 conn_molex8_5267
D[5]A D[6]A D[7]A CS -RESET
F/S REV
JP1 strip6_dil
CN5 conn_molex4_7395
CN1 conn_34_dil
+12
D[0]A D[1]A D[2]A D[3]A D[4]A D[5]A D[6]A D[7]A RS CS COL1 COL2 COL3 COL4 ROW1 ROW2 -RESET -WR -RD
DC1 CXA-L10L
Vin Gnd Iout1 Iout2 IoutRet
MODIFICHE
E.MOD. N.COM. DATA FIRMA APPR.
SOSTITUISCE DATA FIRMA SOSTITUITO DATA DA FIRMA
DATA 14/02/2000 DISEGN. ND APPR. NORM.
DENOMINAZIONE: SCH.EL. SCHEDA DISPLAY + TASTIERA VES30
CODICE DISEGNO 20102620
FOGLIO 1 di 1
Everex
A termini di Legge e' vietato riprodurre o comunicare a terzi il contenuto del presente disegno.


4.5 (mm)
11 (mm)
25 (mm)
25 (mm)
25 (mm)
25 (mm)
20 (mm)
140 (mm)
11 (mm)
P1
P2
P3
P4
P5
CN1



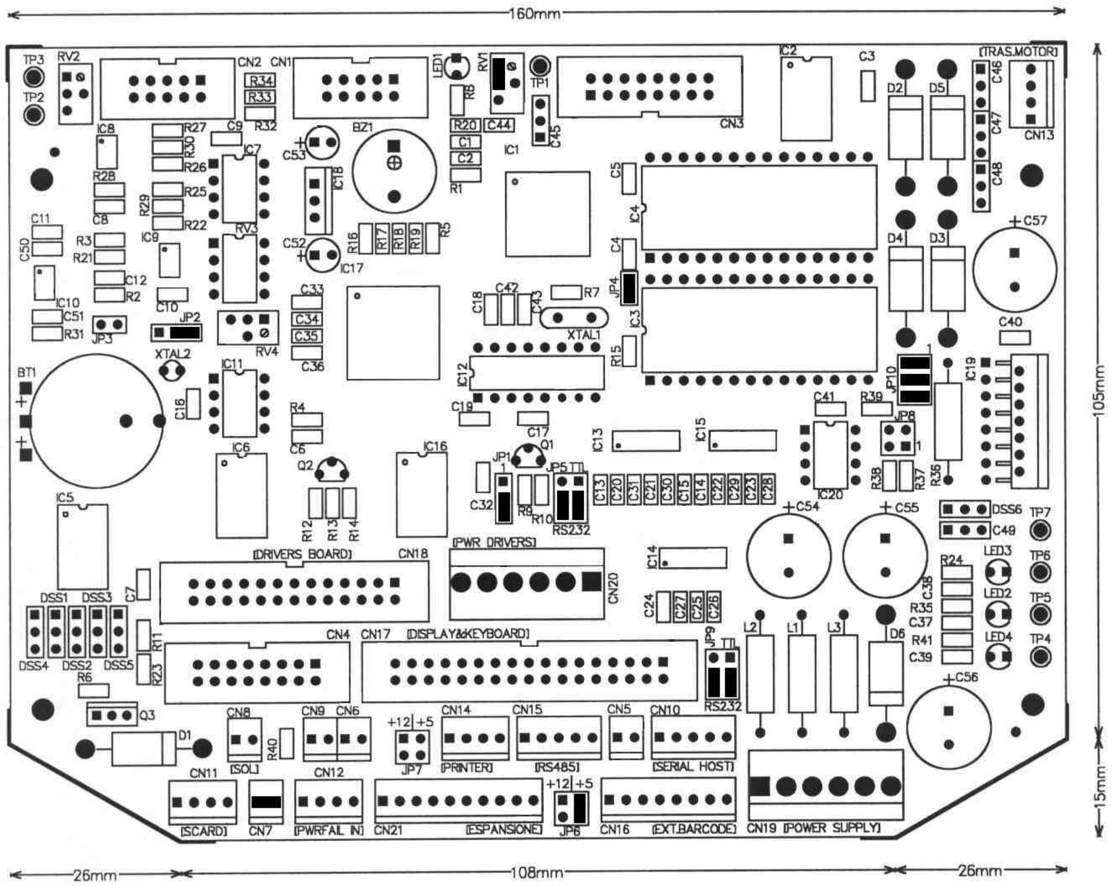
MODIFICHE | E.MOD. | N.COM. | DATA | FIRMA | APPR.

SOSTITUISCE | DATA | FIRMA | SOSTITUITO DA | DATA | FIRMA

DATA 9-Apr-2001 | DISEGN. ND | APPR. | NORM.

DENOMINAZIONE SCH.EL. SCHEDA TASTIERA V30

CODICE DISEGNO 20102840 | REV. | FOGLIO 1 di 1

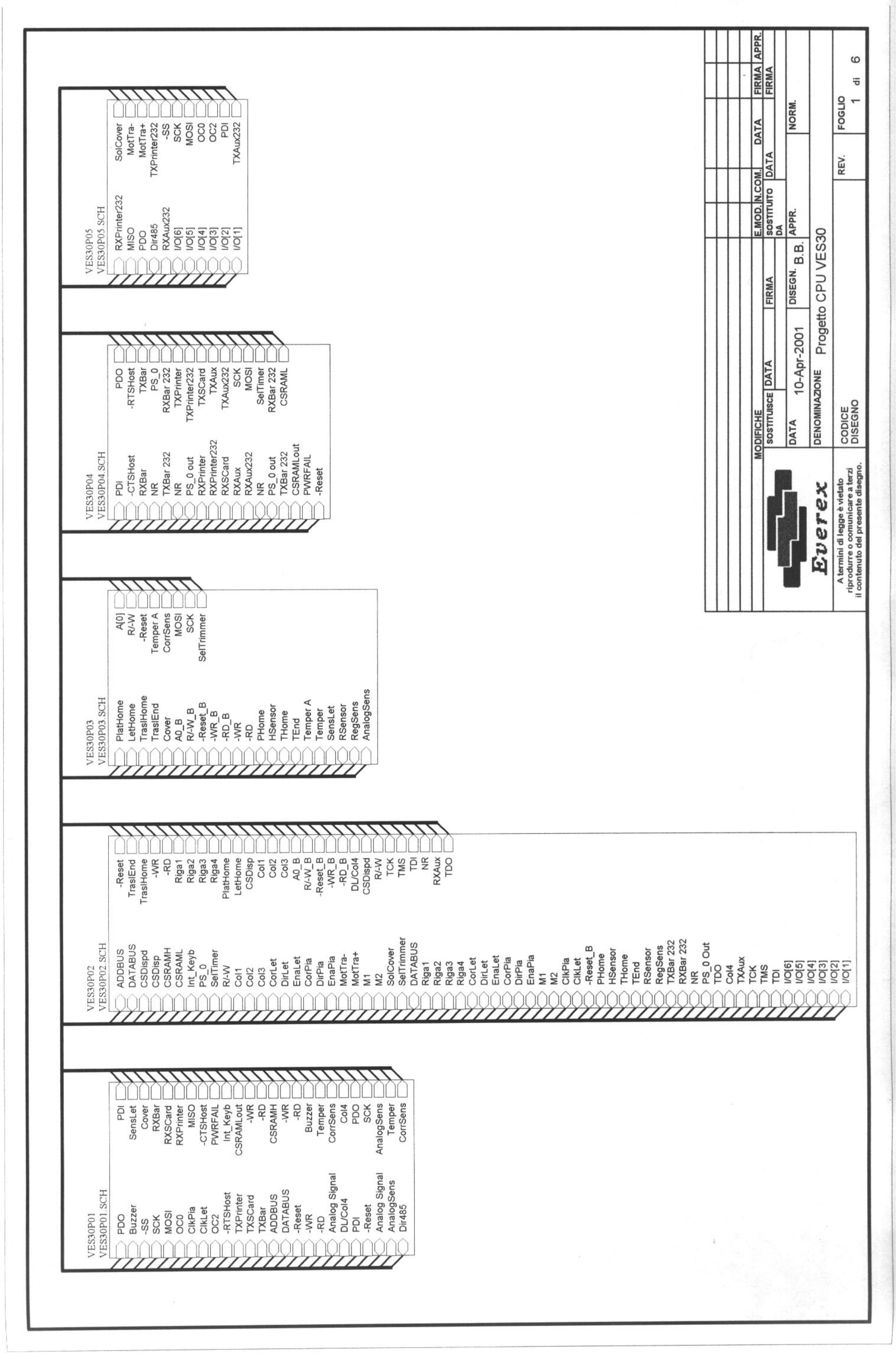


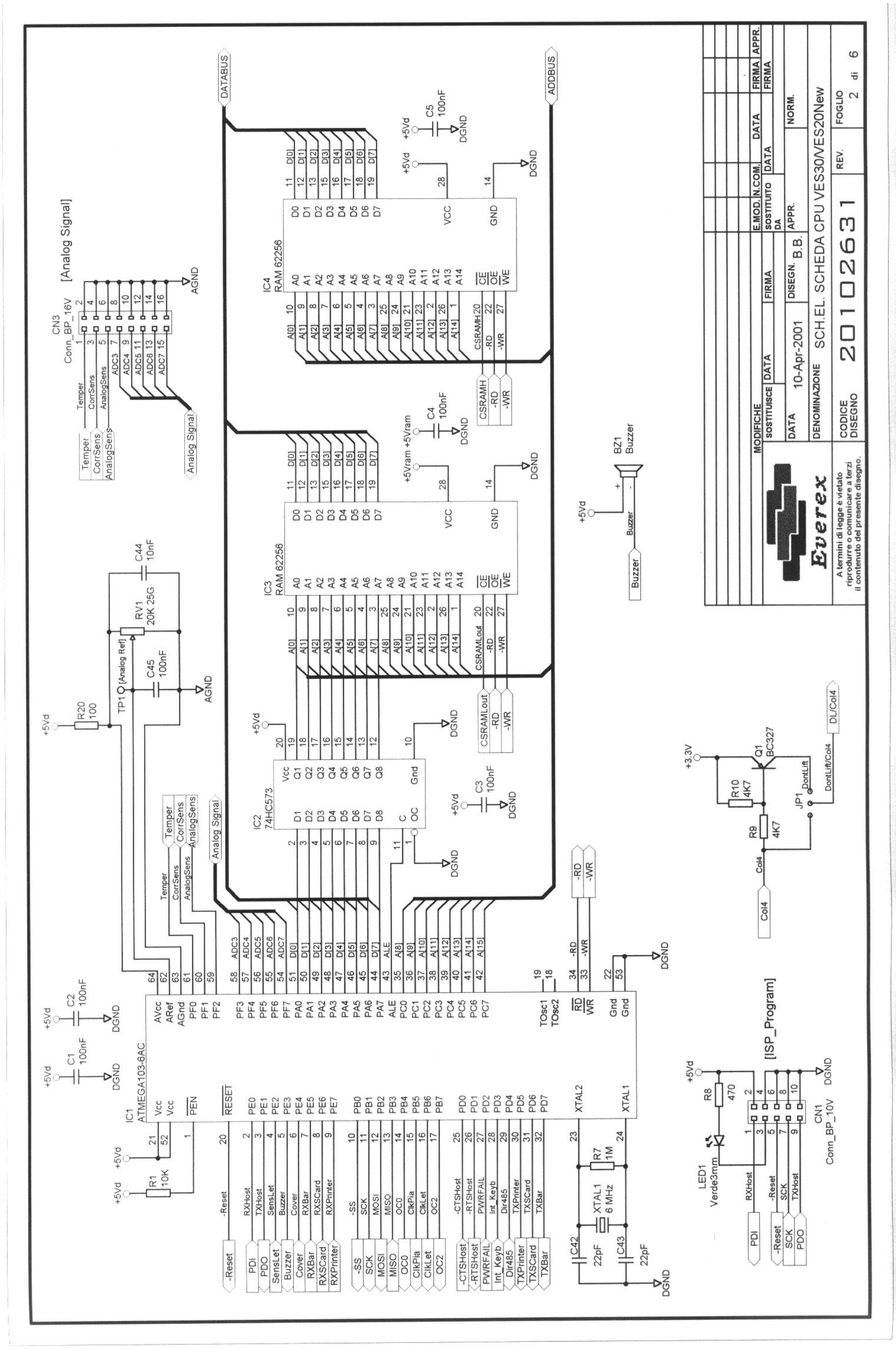
MODIFICHE

NOTA DI MONTAGGIO:

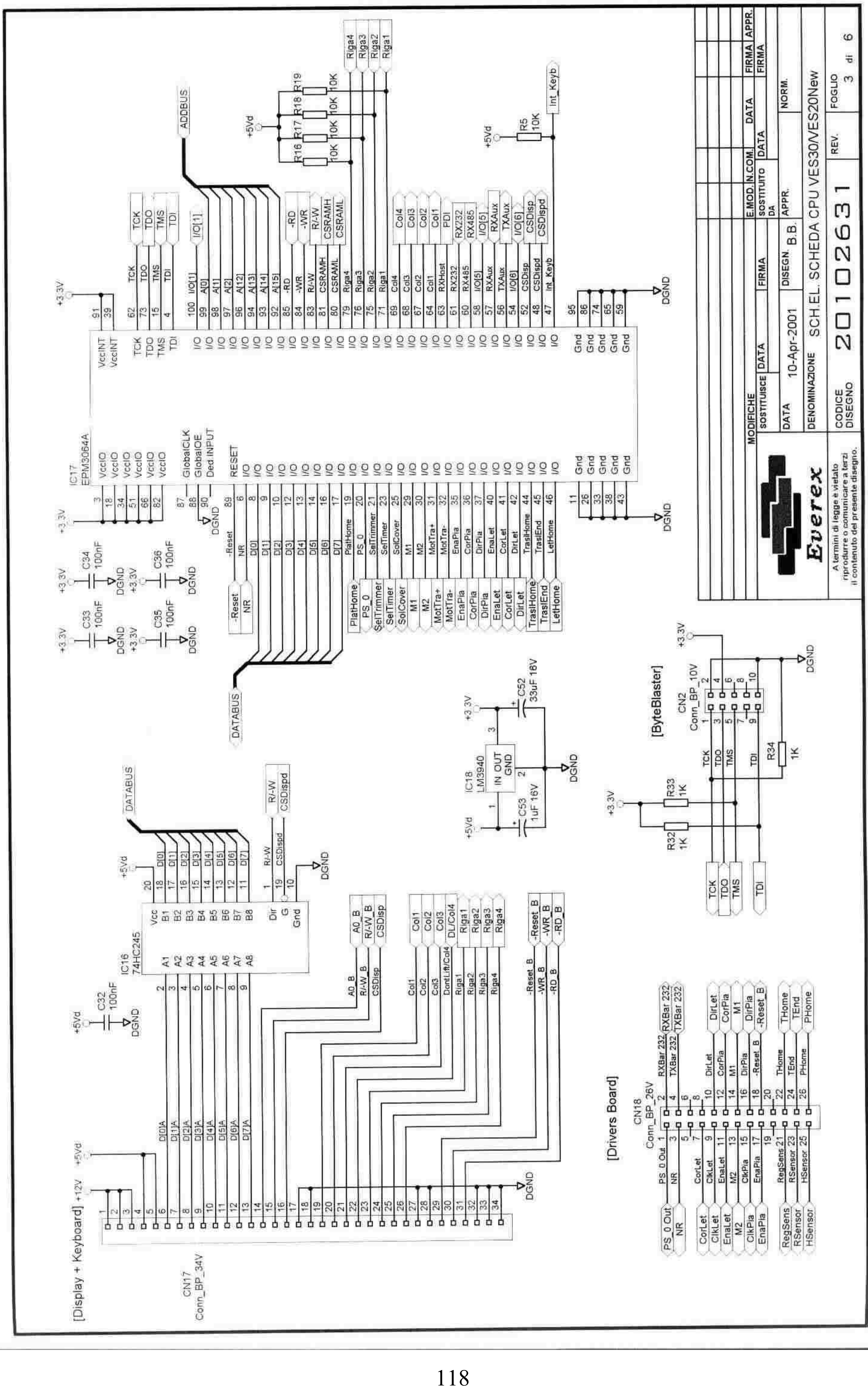
Ponticelli a saldare su RV1,JP10 e CN7

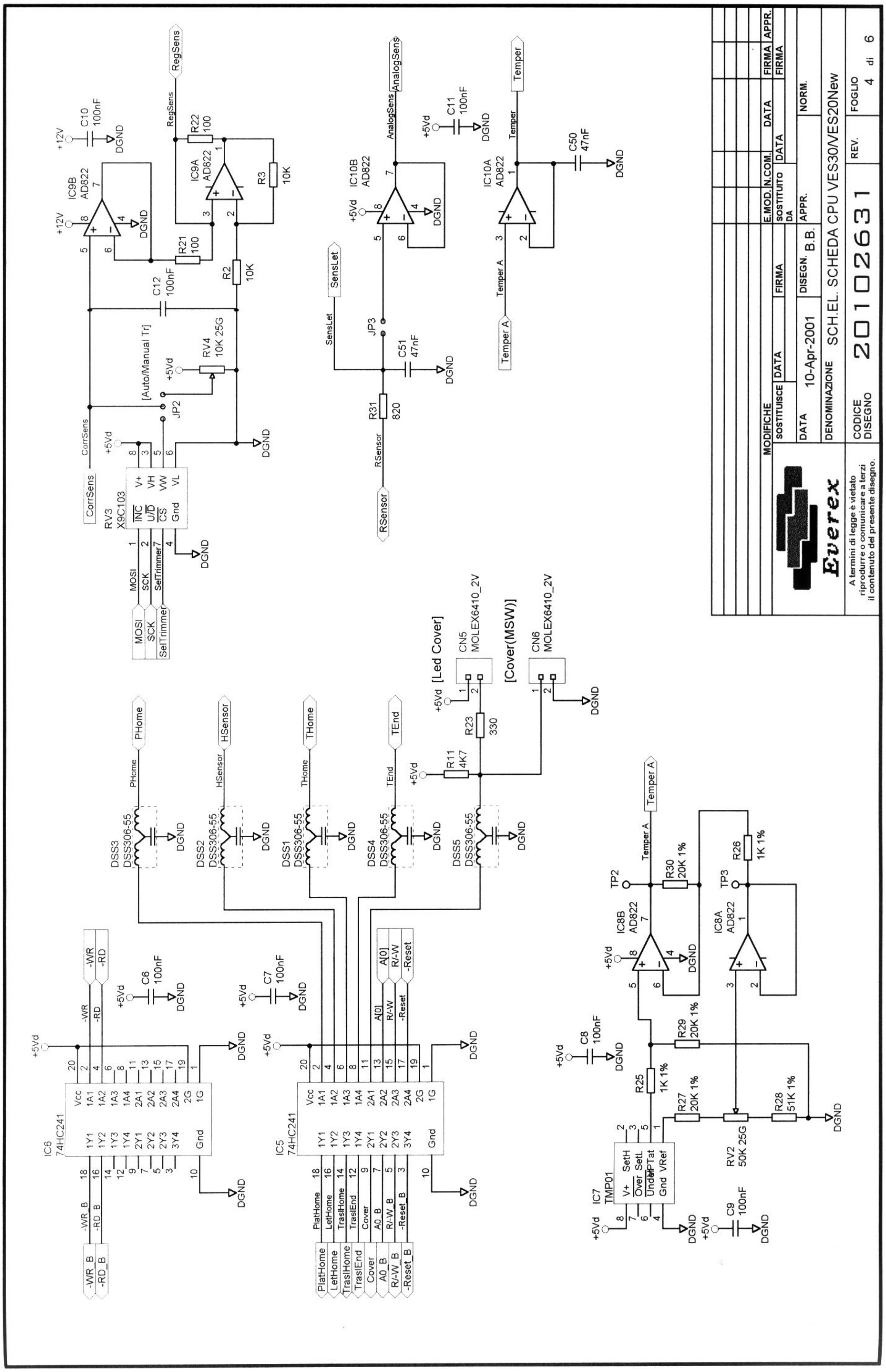
LAVAGGIO		RASATURA h=	E.MOD.	N.COM.	DATA	FIRMA	APPR.
	SCALE: 1.00	MATERIALE	FINITURA				
		SPESS. Cu	TRATT.				
EVEREX		SOSTITUISCE — DATA : — FIRMA	SOSTITUITO DA	DATA / FIRMA			
		DATA : 17–Apr–2001 — DISEGN.	APPR.		NORM.		
		DENOMINAZIONE : SCHEDA CPU VES230&VES20New					
		CODICE DISEGNO — 30112281	REV. 00	FOGLIO 1 DI 1			

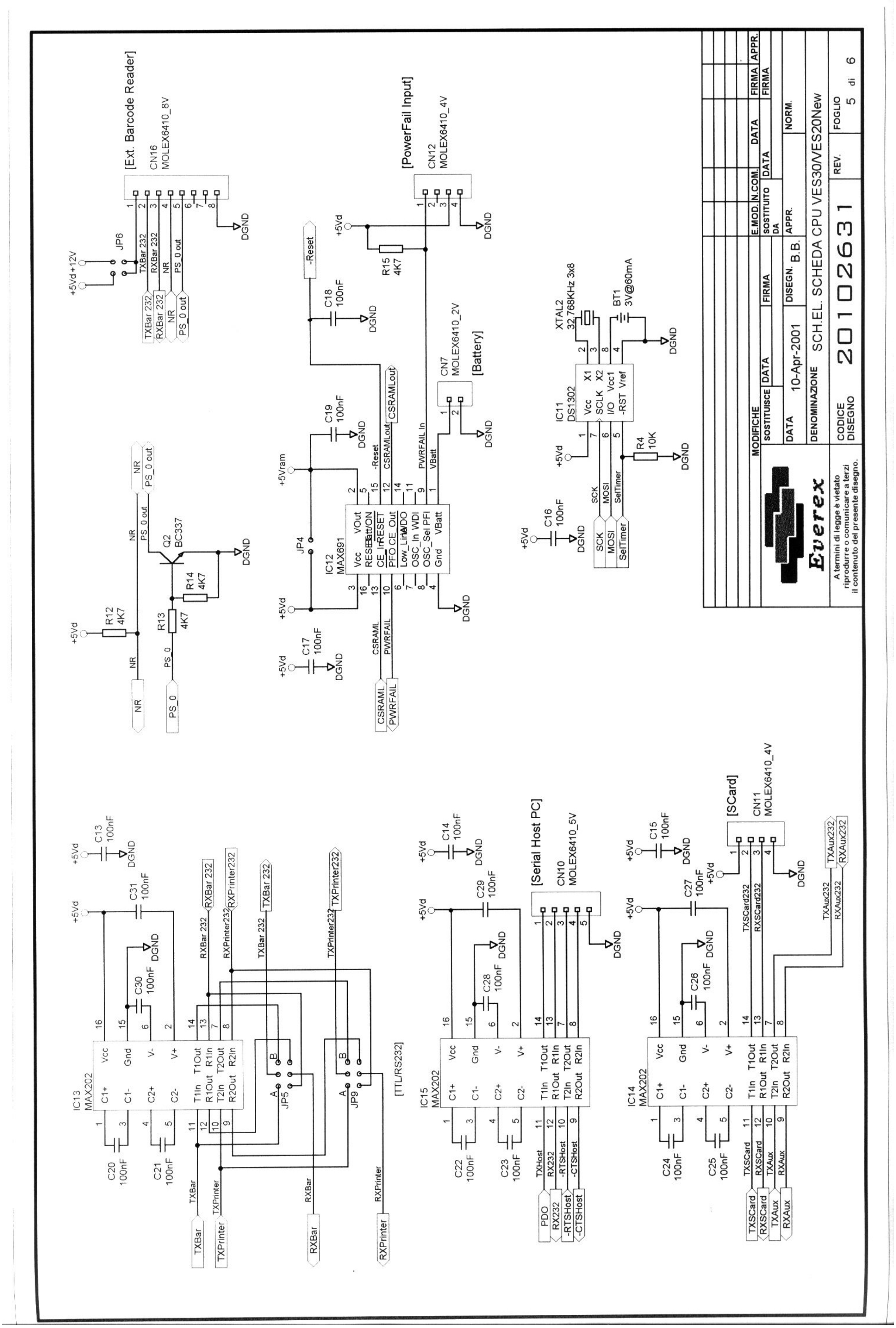

VES30P01
VES30P01.SCH
PDO
Buzzer
-SS
SCK
MOSI
OC0
ClkPia
ClkLet
OC2
-RTSHost
TXPrinter
TXSCard
TXBar
ADDBUS
DATABUS
-Reset
-WR
-RD
Analog Signal
DL/Col4
PDI
-Reset
Analog Signal
AnalogSens
Dir485
PDI
SensLet
Cover
RXBar
RXSCard
RXPrinter
MISO
-CTSHost
PWRFAIL
Int_Keyb
CSRAMLout
-WR
-RD
CSRAMH
-WR
-RD
Buzzer
Temper
CorrSens
Col4
PDO
SCK
AnalogSens
Temper
CorrSens
VES30P02
VES30P02.SCH
ADDBUS
DATABUS
CSDispd
CSDisp
-WR
CSRAMH
CSRAML
Int_Keyb
PS_0
SelTimer
R/-W
Col1
Col2
Col3
CorLet
DirLet
EnaLet
CorPia
DirPia
EnaPia
MotTra-
MotTra+
M1
M2
SolCover
SelTrimmer
DATABUS
Riga1
Riga2
Riga3
Riga4
CorLet
DirLet
EnaLet
CorPia
DirPia
EnaPia
M1
M2
ClkPia
ClkLet
-Reset_B
PHome
HSensor
THome
TEnd
RSensor
RegSens
TXBar 232
RXBar 232
NR
PS_0 Out
TDO
Col4
TXAux
TCK
TMS
TDI
I/O[6]
I/O[5]
I/O[4]
I/O[3]
I/O[2]
I/O[1]
-Reset
TraslEnd
TraslHome
-WR
-RD
Riga1
Riga2
Riga3
Riga4
PlatHome
LetHome
CSDisp
Col1
Col2
Col3
A0_B
R/-W_B
-Reset_B
-WR_B
-RD_B
DL/Col4
CSDispd
R/-W
TCK
TMS
TDI
NR
RXAux
TDO
VES30P03
VES30P03.SCH
PlatHome
LetHome
TraslHome
TraslEnd
Cover
A0_B
R/-W_B
-Reset_B
-WR_B
-RD_B
-WR
-RD
PHome
HSensor
THome
TEnd
Temper A
Temper
SensLet
RSensor
RegSens
AnalogSens
A[0]
R/-W
-Reset
Temper A
CorrSens
MOSI
SCK
SelTrimmer
VES30P04
VES30P04.SCH
PDI
-CTSHost
RXBar
NR
TXBar 232
NR
PS_0 out
RXPrinter
RXPrinter232
RXSCard
RXAux
RXAux232
NR
PS_0 out
TXBar 232
CSRAMLout
PWRFAIL
-Reset
PDO
-RTSHost
TXBar
PS_0
RXBar 232
TXPrinter
TXPrinter232
TXSCard
TXAux
TXAux232
SCK
MOSI
SelTimer
RXBar 232
CSRAML
VES30P05
VES30P05.SCH
RXPrinter232
MISO
PDO
Dir485
RXAux232
I/O[6]
I/O[5]
I/O[4]
I/O[3]
I/O[2]
I/O[1]
SolCover
MotTra-
MotTra+
TXPrinter232
-SS
SCK
MOSI
OC0
OC2
PDI
TXAux232
MODIFICHE
SOSTITUISCE
DATA
FIRMA
E.MOD.
N.COM.
SOSTITUITO DA
DATA
FIRMA
APPR.
DATA
10-Apr-2001
DISEGN.
B.B.
APPR.
NORM.
FIRMA
DENOMINAZIONE
Progetto CPU VES30
CODICE DISEGNO
REV.
FOGLIO
1 di 6
Everex
A termini di legge è vietato riprodurre e comunicare a terzi il contenuto del presente disegno.

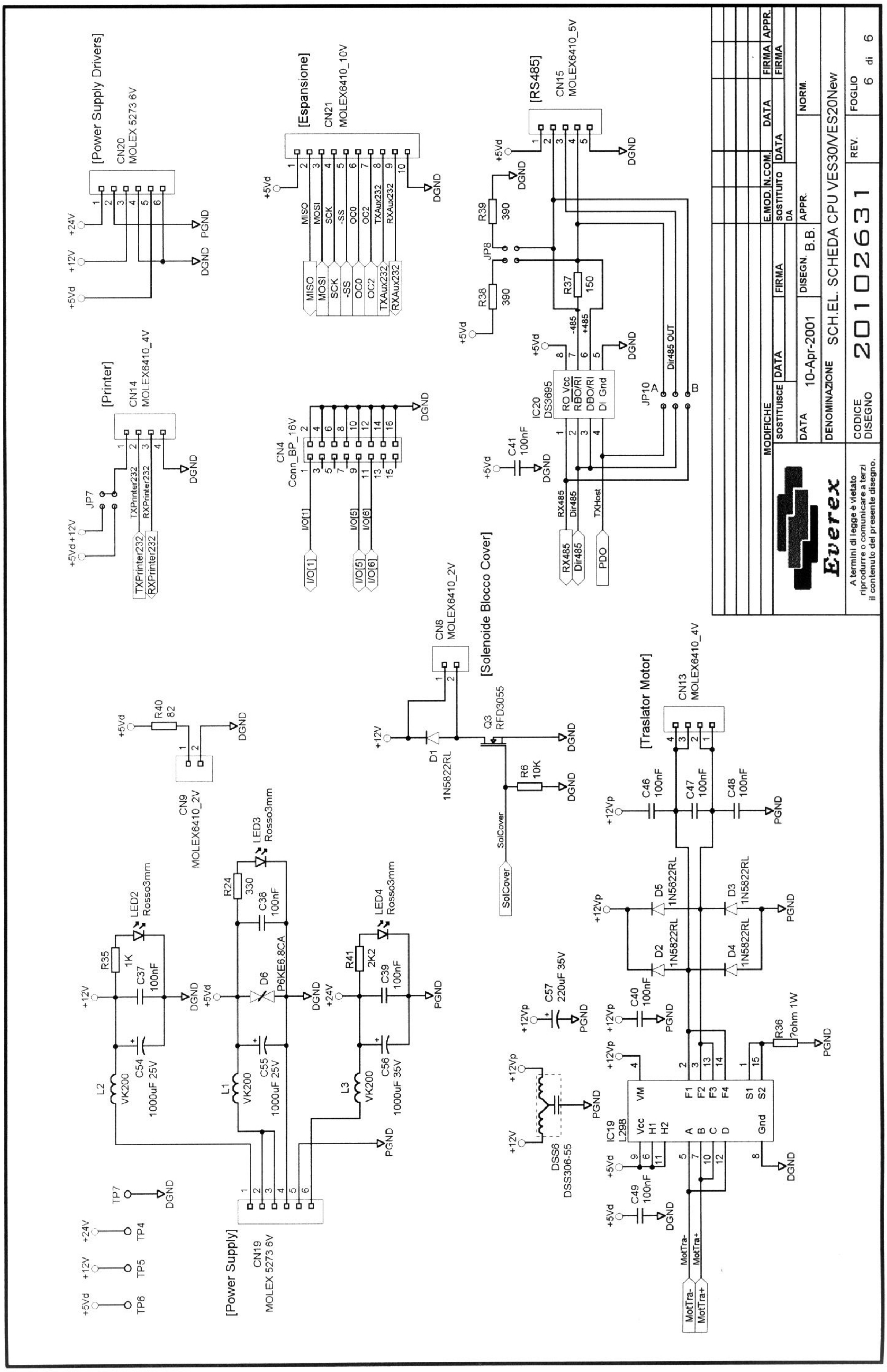


ATMEGA103-6AC
RAM 62256
74HC573
[Analog Signal]
[ISP_Program]
DATABUS
ADDBUS
Everex
A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno.
DATA 10-Apr-2001
DISEGN. B.B.
DENOMINAZIONE SCH.EL. SCHEDA CPU VES30/VES20New
CODICE DISEGNO 20102631
FOGLIO 2 di 6


[Display + Keyboard]
CN17
Conn_BP_34V
IC16
74HC245
IC17
EPM3064A
IC18
LM3940
[Drivers Board]
CN18
Conn_BP_26V
[ByteBlaster]
CN2
Conn_BP_10V
ADDBUS
DATABUS
Everex
A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno.
MODIFICHE
DATA
10-Apr-2001
DISEGN. B.B.
DENOMINAZIONE
SCH.EL. SCHEDA CPU VES30/VES20New
CODICE DISEGNO
20102631
REV.
FOGLIO
3 di 6


Everex
A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno.
MODIFICHE
SOSTITUISCE
DATA
FIRMA
E.MOD.
N.COM.
DATA
FIRMA
APPR.
SOSTITUITO DA
DATA
10-Apr-2001
DISEGN.
B.B.
APPR.
NORM.
DENOMINAZIONE
SCH.EL. SCHEDA CPU VES30/VES20New
CODICE DISEGNO
20102631
REV.
FOGLIO
4 di 6


[Ext. Barcode Reader]
CN16
MOLEX6410_8V
JP6
+5Vd
+12V
TXBar 232
RXBar 232
NR
PS_0 out
DGND
[PowerFail Input]
CN12
MOLEX6410_4V
-Reset
C18
100nF
R15
4K7
CN7
MOLEX6410_2V
[Battery]
IC12
MAX691
CSRAMLout
PWRFAIL In
VBatt
C19
C17
JP4
+5Vram
CSRAML
PWRFAIL
XTAL2
32.768KHz 3x8
BT1
3V@60mA
IC11
DS1302
R4
10K
C16
SCK
MOSI
SelTimer
NR
PS_0 out
Q2
BC337
R12
4K7
R13
4K7
R14
4K7
PS_0
IC13
MAX202
C13
C31
C30
C20
C21
JP5
JP9
[TTL/RS232]
RXBar 232
RXPrinter232
TXBar 232
TXPrinter232
TXBar
TXPrinter
RXBar
RXPrinter
IC15
MAX202
C14
C29
C28
C22
C23
[Serial Host PC]
CN10
MOLEX6410_5V
TXHost
RX232
-RTSHost
-CTSHost
PDO
IC14
MAX202
C15
C27
C26
C24
C25
[SCard]
CN11
MOLEX6410_4V
TXSCard232
RXSCard232
TXAux232
RXAux232
TXSCard
RXSCard
TXAux
RXAux
MODIFICHE
E.MOD.
N.COM.
DATA
FIRMA
APPR.
SOSTITUISCE
SOSTITUITO DA
NORM.
DATA
10-Apr-2001
DISEGN.
B.B.
DENOMINAZIONE
SCH.EL. SCHEDA CPU VES30/VES20New
CODICE DISEGNO
201026З1
REV.
FOGLIO
5 di 6
Everex
A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno.


[Power Supply Drivers]
CN20
MOLEX 5273 6V
[Printer]
CN14
MOLEX6410_4V
TXPrinter232
RXPrinter232
JP7
[Espansione]
CN21
MOLEX6410_10V
MISO
MOSI
SCK
-SS
OC0
OC2
TXAux232
RXAux232
CN4
Conn_BP_16V
I/O[1]
I/O[5]
I/O[6]
[RS485]
CN15
MOLEX6410_5V
R39
390
R38
390
JP8
R37
150
IC20
DS3695
C41
100nF
RX485
Dir485
TXHost
PDO
JP10
Dir485 OUT
CN9
MOLEX6410_2V
R40
82
CN8
MOLEX6410_2V
[Solenoide Blocco Cover]
D1
1N5822RL
Q3
RFD3055
R6
10K
SolCover
[Traslator Motor]
CN13
MOLEX6410_4V
C46
100nF
C47
100nF
C48
100nF
D5
1N5822RL
D3
1N5822RL
D2
1N5822RL
D4
1N5822RL
R36
?ohm 1W
C40
100nF
C57
220uF 35V
DSS6
DSS306-55
IC19
L298
C49
100nF
MotTra-
MotTra+
LED2
Rosso3mm
R35
1K
C37
100nF
LED3
Rosso3mm
R24
330
C38
100nF
D6
P6KE6.8CA
LED4
Rosso3mm
R41
2K2
C39
100nF
L2
VK200
C54
1000uF 25V
L1
VK200
C55
1000uF 25V
L3
VK200
C56
1000uF 35V
CN19
MOLEX 5273 6V
[Power Supply]
TP4
TP5
TP6
TP7
+5Vd
+12V
+24V
+12Vp
DGND
PGND
Everex
A termini di legge è vietato riprodurre o comunicare a terzi il contenuto del presente disegno.
MODIFICHE
SOSTITUISCE
DATA
10-Apr-2001
DISEGN.
B.B.
DENOMINAZIONE
SCH.EL. SCHEDA CPU VES30/VES20New
CODICE DISEGNO
20102631
REV.
FOGLIO
6 di 6